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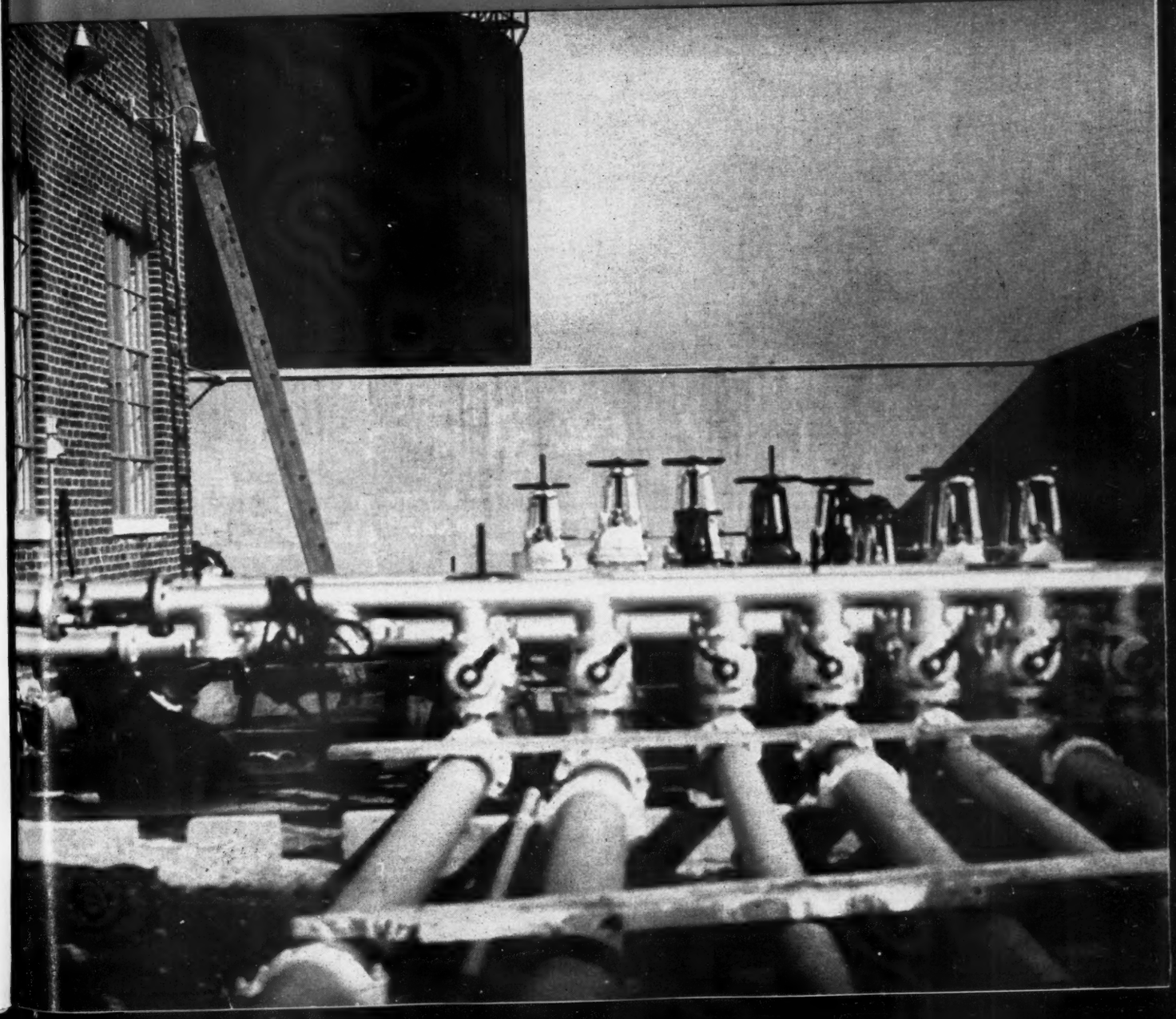
fueloil & oil heat



SALES EFFICIENCY can be measured - in GALLONS and Computed in Profits

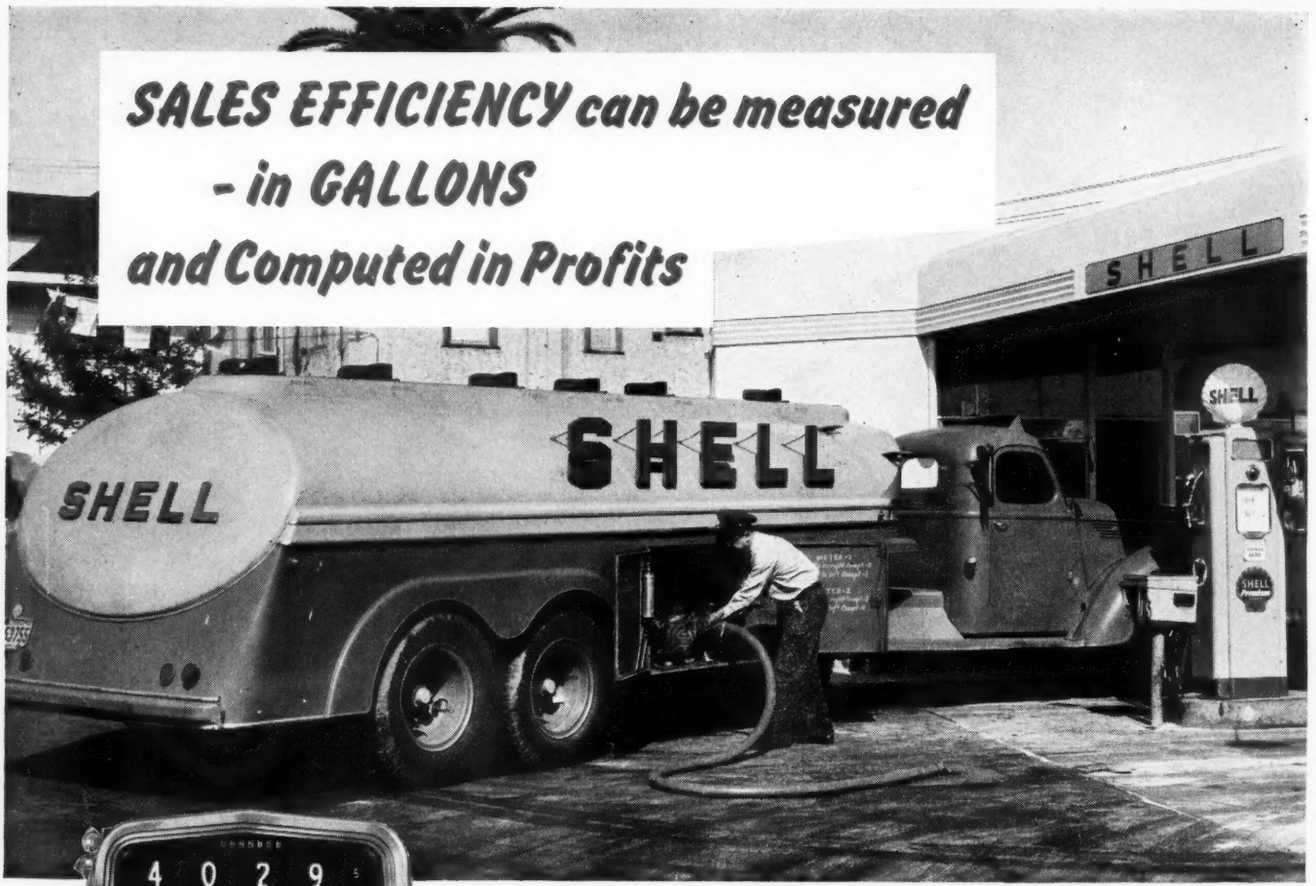
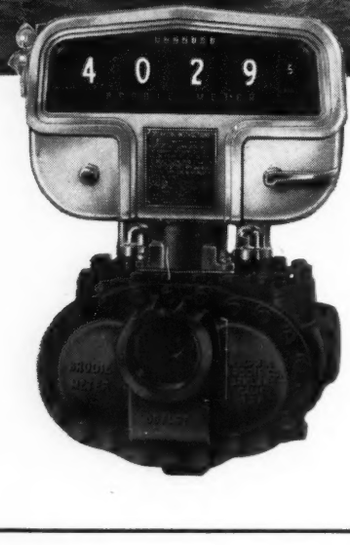


Photo: Courtesy of Shell Oil Co.



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Rapidly increasing gasoline consumption due to the revival of motor car and truck manufacture, calls for increased marketing efficiency—particularly in view of today's higher costs of delivery operations.

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REPRESENTATIVES AND STOCKS IN ALL PRINCIPAL CITIES

VOL. 6, NO. 6

fueloil & oil heat

OCTOBER

1947

Names in the News

Philip C. Johnson, Euclid, Ohio, has joined Harvey-Whipple, Inc., Springfield, Mass., as Master Kraft Oil Heat sales representative in the states of Ohio and Kentucky. For the past three years he has been manager, State Supply Co., Cleveland and for seven years before that covered the midwest territory for Bird & Son, building materials company.

R. M. Bartlett, former general manager of Fueloil Sales for Gulf Oil, has been elected a vice-president of the corporation in charge of fueloil sales. The promotion was voted at a meeting of directors on September 22. Following a period of employment abroad after graduation from Yale in 1915, Mr. Bartlett joined the Gulf companies in 1926 as assistant to the vice-president in charge of fueloil sales. He was promoted to manager of the fueloil department in 1933 and was named general manager of fueloil sales the following year.

L. M. Becknell, Atlanta, Ga., is sales manager for the newly-created southern sales district, L. J. Mueller Furnace Co., Milwaukee, Wis. He was with Mueller from 1936 to 1945, when he was granted a leave of absence to assume an important position with the Atomic Bomb Project at Oak Ridge, Tenn. In 1946 he became southeast district manager, Rheem Mfg. Co., before rejoining Mueller. The southern sales district embraces North and South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, New Mexico, Oklahoma, eastern Tennessee and southeastern

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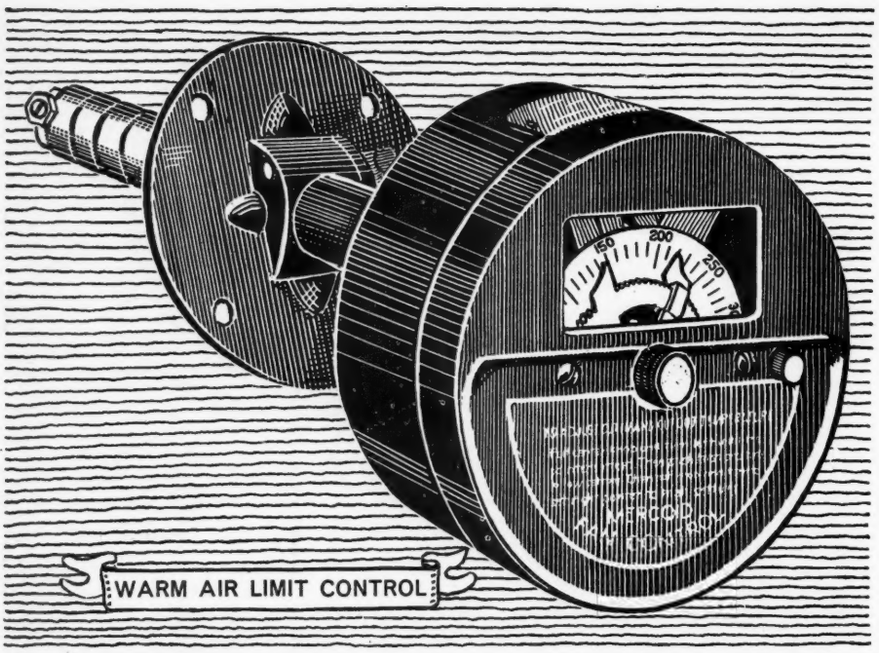

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Automatic controls are entrusted with great responsibilities. Everything depends upon their unfailing performance. Therefore, the selection of automatic controls is a matter for serious consideration. ★ With this thought in mind, Mercoid Controls invite the most critical inspection and comparison in actual field service. ★ Mercoid Controls rank first for convenience of adjustment—dependable service and long life.

THE ONLY 100% MERCURY SWITCH EQUIPPED CONTROLS
THEY ARE NOT AFFECTED BY DUST, DIRT OR CORROSION

Mercoid Automatic Controls are designed for domestic oil burners and coal stokers—also for various industrial applications requiring the control of pressure, temperature, liquid level and mechanical operation.

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Kentucky. *E. M. Fondersmith,* who covers Florida and has been with Mueller for many years, is assisting Mr. Becknell.

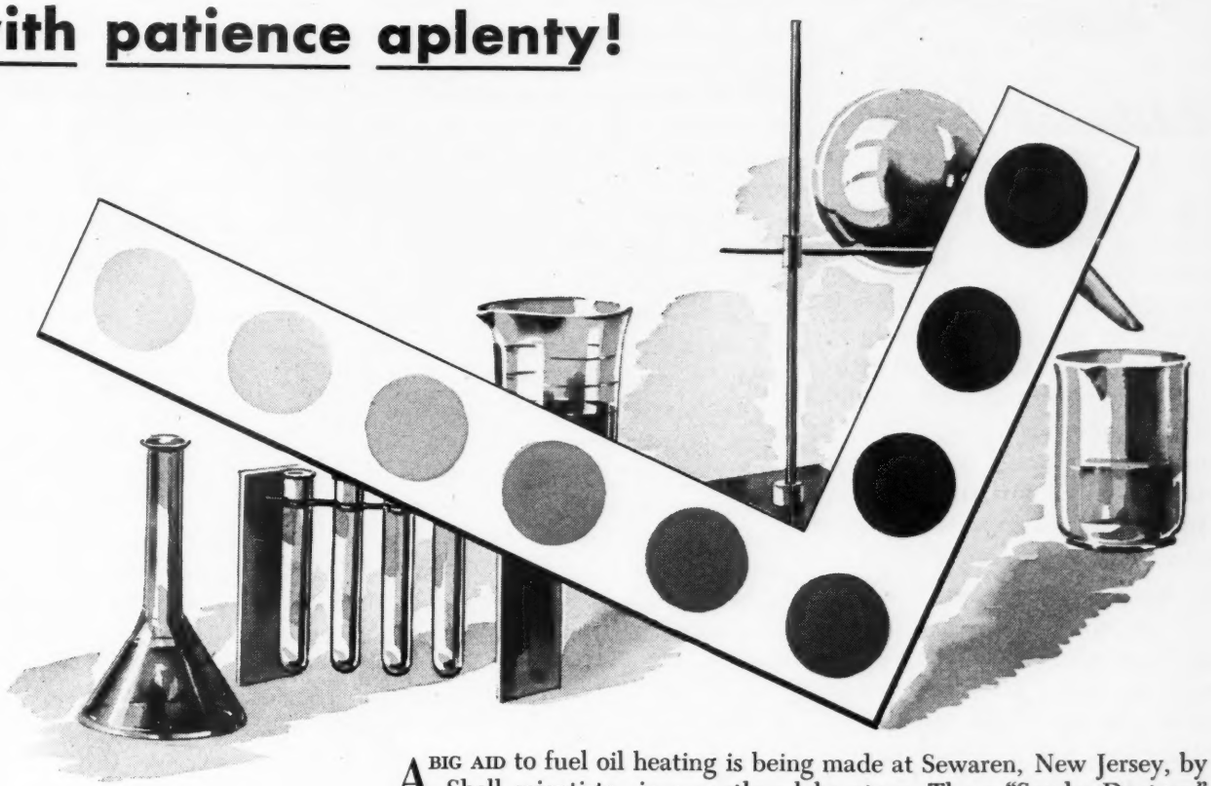
Ray W. Qualley has been named chief product design engineer, Meyer Furnace Co., Peoria 1, Ill., in charge of development of new automatic heating equipment for Meyer and Weir lines and application of latest development to present products. Previously Mr. Qualley had been laboratory supervisor for Airtemp for three years in charge of development and testing of heating equipment and before that was associated with Minneapolis-Honeywell for eleven years. Another announcement reveals the appointment of *Frank H. Schryer* as superintendent of the Peru, Illinois plant, Meyer Furnace Co. His background includes thirty years experience in manufacturing and foundry work and a recent tenure as general superintendent, L. J. Mueller Furnace Co.

Hoffman S. Beagle has become manager, Heating Products Div., Miller Co., Meriden, Conn. Mr. Beagle has been associated with the company for many years and most recently functioned as manufacturing administrator.

Harold F. Dean has become director of research, Conco Engineering Works, Mendota, Ill., and as such will coordinate and supervise development of stokers, gas and oilfired winter conditioning units, conversion oilburners and furnaces, with particular emphasis on Conco-Breese horizontal oilburner now in mass production. Mr. Dean joined Conco in 1924 and has advanced through the positions of sheet metal works foreman, shop superintendent and chief engineer. During the war he served as subcontract executive and coordinated all outside purchases of materials.

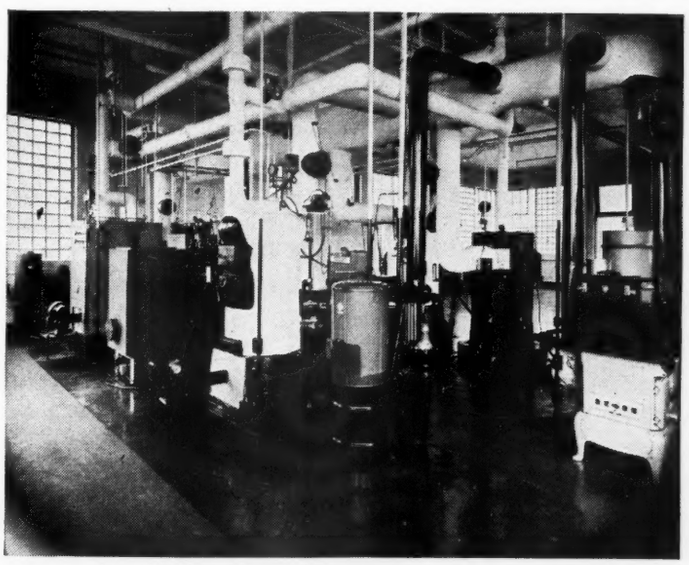
SMOKE DOCTORS

—with patience aplenty!



A BIG AID to fuel oil heating is being made at Sewaren, New Jersey, by Shell scientists—in a spotless laboratory. These "Smoke Doctors," with patience aplenty, have invented a machine which draws a sample of combustion gases from the furnace flue, and measures the soot against their "Scale of Soots." Their aim is to correct combustion—*stop the soot!*

For 18 years this unique Shell Research Laboratory has worked to develop better fuel oils and more efficient fuel oil burners.



A corner of the fuel burner laboratory at Sewaren, N. J.

Shell's laboratory is the center of home heating oil research—fuel oil is studied in relation to the equipment that is made to burn it. Makers of all types of oil burners have participated in and profited by this work.

SHELL®

SHELL OIL COMPANY
INCORPORATED

fueloil & oil heat

Editorial Leaks

Some of the most interesting men at high levels in the oil industry still have a lot of trouble getting away from the view so long held that gasoline is the one worthwhile product made from crude. In informal side talks at the National Petroleum Association meeting at Atlantic City at mid-September, oilheating equipment manufacturers were being considered shortsighted for encouraging further installations this year, when fueloil supply troubles are more than probable.

One key figure was saying to a handful of listeners, "Why, even General Motors, look what they're doing; it isn't three weeks since I saw their oilburner advertising in New York papers. Now you know they have economists fully as good as ours, and they can't fail to know what they're heading into."

It hadn't occurred to him to be concerned over General Motors' advertising of motor cars, diesel locomotives, farm lighting plants and other improvements to civilization, all of which will call for the use of more oil products of one kind or another.

The oilburner industry still has a long way to go in selling itself to most top level oil men . . . not to all of them, thank God.

◈

Talk of allocations of heating oil supply, voluntary rationing, and hints of price control are common around the industry these days. Though most oil men abhor any suggestion of government control, a large segment of the industry is in favor of government help in the present emergency, rather than risk the bad public relations of cold homes.

As the heating season approaches concern is being expressed for the supply of distillates at the refinery level. Gasoline demand is remaining relatively high and the price is firm. Refiners continue to make gasoline at the expense of distillate, and there is developing a true "shortage" of heating oils.

B. L. Majewski of Deep Rock has appealed to refiners to change their refinery yields east of the Rocky Mountains in order to meet an estimated 20 million barrel shortage in the Middle West. He has pointed out that stocks of distillates can be rerun to gasoline, should there be any surplus, but that gasoline cannot be converted to distillates. Crude run to gasoline is lost forever to the oilheating industry. Unless there is an improvement in the kerosene and distillate supply picture before the meeting of the National Petroleum Council at Washington, October 9, Mr. Majewski is planning to ask that Justice Department approval be sought for an allocation system.

Other groups also are reported to be studying allocation plans to assure enough heating oils and kerosene for all sections of the country. Independents are said to be investigating several aspects of allocations with a view to putting the suggestion before government bodies.

◈

It is more than two years since the end of the War and most of us still cannot buy an automobile, a 275-gallon tank, and in a couple of months we may have a hard time finding oil. This would have been unbelievable to most of us at the War's end. We were ready for abundance, and we were taught to expect we would have it. Instead we have faced one scarcity after another, and such products as are available are too high in price, and going higher.

One factor frequently overlooked is the net increase in the population. Since the last census in 1940 the country has gained more than 9 million people. This is the equivalent of adding another Metropolitan New York to the country, or two more Chicagos. Instead of 132 million people, we now have 141 million plus, and most of them have more money to spend than ever before.

There is an average monthly shortage of 16,000 freight cars in the country. There have been no tank cars built since 1942, and 6,000 since then have been junked or otherwise removed from service. Truck registration is increasing, but it is not yet large enough to do the necessary hauling. Plant capacity, which many thought had been vastly over-expanded during the war, now is judged to be inadequate. The petroleum industry alone is planning a $4 billion expansion program.

The country is growing. Some people think there are too many people in it already, but it is hardly inhabited compared with other parts of the world. The population of the United States could live in New York State without exceeding the density of population in Belgium. We have a long way to go, and a tremendous market, but it is hard to live on future promise when a fellow cannot find a house to live in.

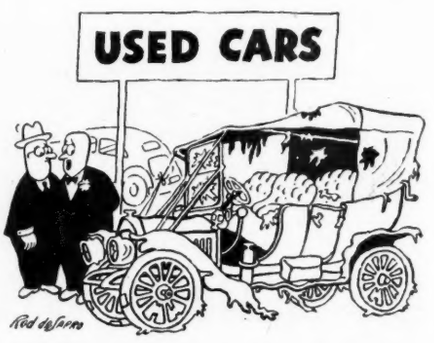
◈

Oilheating promotion is breaking out like a rash in a number of areas, aided and abetted by the distribution division of Oil Heat Instiute and its member chapters. There has been more than a few raised eyebrows in the oil business over the timing of this promotion, and a few men have wondered aloud if this is the time to ask people to buy oilburners.

A careful reading of the literature being used will show that the promotion is more institutional than aggressive, and is stressing the need for oil-saving through efficient use of the available supply. It is aimed at stimulating oilburner sales and service work with a view to decreasing the individual fueloil demand.

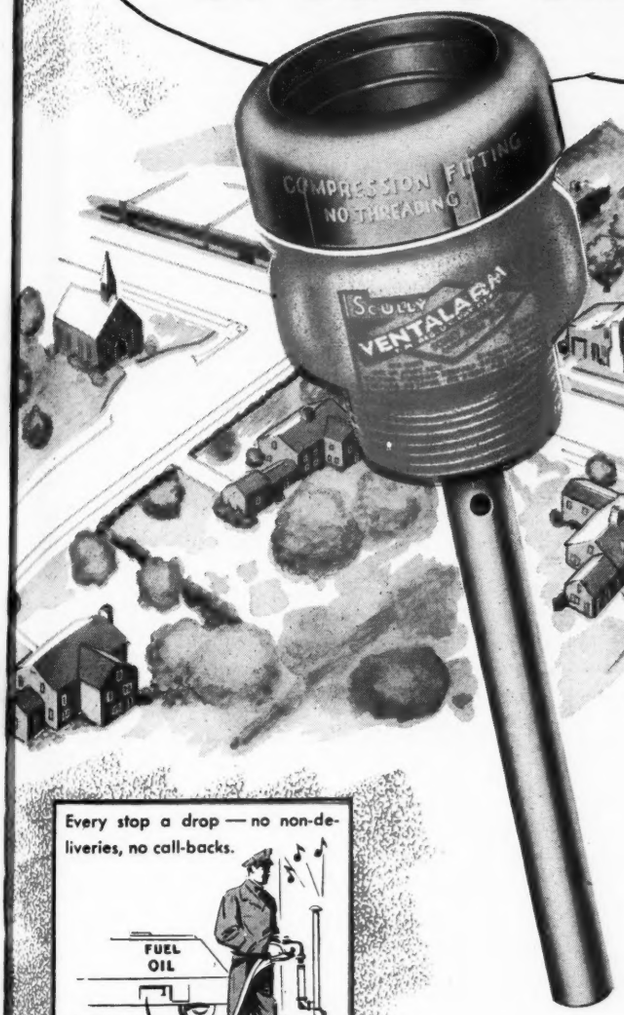
The oilheating industry next spring is celebrating the twenty-fifth anniversary of its first long pants. It is time that it be recognized by the public as a stable and responsible industry. It is this job that OHI now is attempting to complete.

If, as expected, the industry faces much what the gas industry suffered last winter, there will be need for all the present promotion, and more.



"Then too, it's been thoroughly road-tested"

in the PROFITS of 3500 oil dealers...



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T. M. Reg. U. S. Pat. Off.

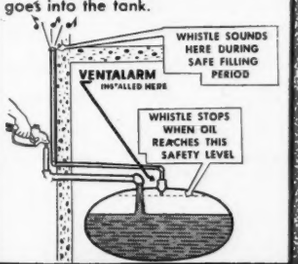
MAKES A DIFFERENCE

Every stop a drop — no non-deliveries, no call-backs.

VENTALARM Signal means more deliveries — more time saved.

Driver need never enter the home — complete convenience for housewife

Fast-filling, non-spilling. All the oil goes into the tank.


WHISTLE SOUNDS HERE DURING SAFE FILLING PERIOD
VENTALARM INSTALLED HERE
WHISTLE STOPS WHEN OIL REACHES THIS SAFETY LEVEL

VENTALARM Model LC for use on existing installations

Over 3500 fuel oil dealers are now enjoying the *extra* profits made possible by their use of VENTALARM Fill Signal.

Delivery costs are very definitely cut by 20% to 30%. The testimony of hundreds of oil companies is ample proof of this.

Let VENTALARM make this difference for YOU.

Equip your customers' tanks *now* with this time-saving, profit-making device! Enjoy VENTALARM benefits *this* heating season!

Available in all models at your local supply house

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VENTALARM
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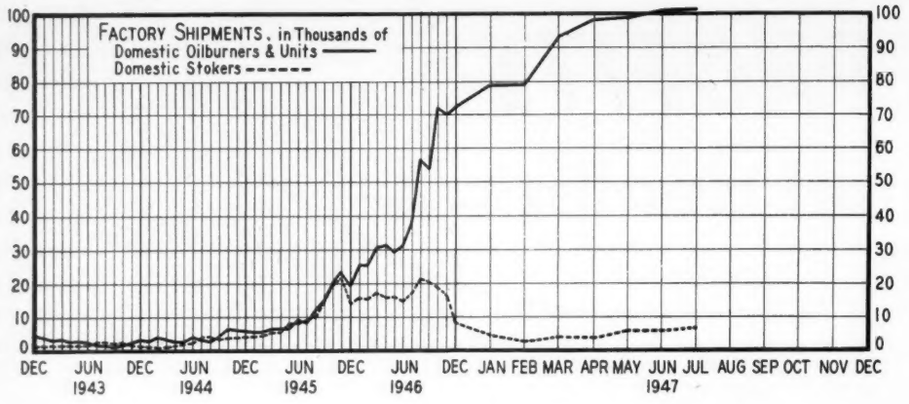
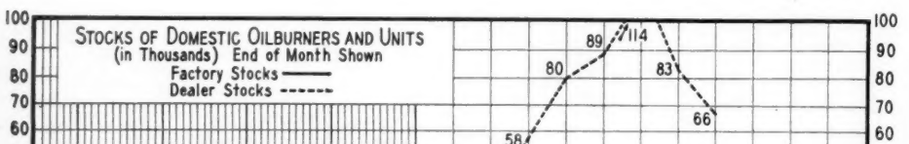

FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Stokers
DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1943 1944 1945 1946 1947

Shipments of Oilburners and Units

(Including Exports)

Adjusted to include manufacturers other than the 162 reporting to Census Bureau, FUELOIL & OIL HEAT'S estimates of shipments are:

	JULY			SEVEN MONTHS		
	1947	*1946*	*Percent Change*	*1947*	*1946*	*Percent Change*
Conversion	81,723	33,875	+141.2	531,591	190,142	+179.5
Boiler units	5,953	1,950	+205.3	31,058	9,775	+217.7
Furnace units	13,453	1,918	+601.4	100,993	12,247	+724.6
All domestic	101,129	37,743	+167.9	663,542	212,164	+212.7
Commercial	4,182	3,619	+ 15.6	31,256	20,333	+ 53.7
Total	105,311	41,362	+154.6	694,798	232,497	+197.6

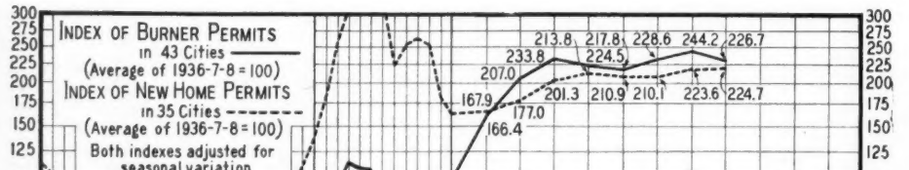

STOCKS OF DOMESTIC OILBURNERS AND UNITS
(in Thousands) End of Month Shown
Factory Stocks
Dealer Stocks
JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1942 1943 1944 1945 1946 1947

August Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS	BOILER-BURNERS	FURNACE BURNERS
Highest	$530	$975	$800
Lowest	245	500	505
Aug. Aver.	351	714	621
July Aver.	348	680	603

Price Index: Conversion Burners: January 1940 is 100%

WHOLESALE				RETAIL			
August	139.4	Six months ago	157.9	August	142.5	Six months ago	144.6
July	144.0	Year ago	137.4	July	144.7	Year ago	136.6


INDEX OF BURNER PERMITS
in 43 Cities
(Average of 1936-7-8 = 100)
INDEX OF NEW HOME PERMITS
in 35 Cities
(Average of 1936-7-8 = 100)
Both indexes adjusted for seasonal variation
DEC APR AUG DEC APR AUG DEC APR AUG DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1944 1945 1946 1947

Oilheating Trends

DURING AUGUST AN estimated 84,232 domestic oilburners and units were installed. The July estimate has been revised slightly downward to 78,310. In a thorough analysis of just what happened in the first half of the year, published elsewhere in this issue, a new figure is set for that six-month period of 355,883 installations.

Thus total installations for eight months ending with August are now estimated to have been 518,425. Some of these were replacements; among all reporting dealers replacements in the first eight months were 7.3% of total installations, a slightly lower ratio than last year. Actual new oil customers in the eight months were thus approximately 480,580. In all probability another month will see us passing the 532,000 new oil customers mark projected for this year by the magazine in June, and with three months to go, though of lessened activity.

If the four fall months average only half of the monthly average thus far, the year's total will be about 600,000 new oil users. These will bring a 20% rise in heating oil requirements, apart from the fact that last season averaged 4% milder than normal for weather. A demand rise over last season of fully 25% is indicated.

BURNER STOCKS: Stocks of domestic oilburners and units on August 31 were approximately 65,734, the second sharp drop from the peak of 114,000 reached at the end of June. Factory stocks at the end of July, the latset available figures, were 20,480.

SERVICE INCOME: Average service department income of reporting dealers for August was $2,824, up 5% from $2,696 reported by the identical dealers the previous year. July income was $2,558; June was $2,529.

SUMMER CLEAN-UP: There has been added promotion, added selling this summer on clean-up work, resulting in some rise in the number of oilheating plants cleaned. Including clean-up orders not yet taken care of, dealers report that 60% of all their customers are getting a clean-and-tune-up job before the end of September. This compares with 57% last summer for the identical group of dealers.

It is pretty obvious, however, that the tune-up phase of the summer cleaning job is sometimes less than the best, for only

43% of the dealers use combustion testing instruments on this work. That 43% of dealers account for 69% of all summer cleaning work, showing that it's the larger dealers generally who use instruments.

Among the jobs cleaned and checked with instruments this summer, the dealers report an average CO_2 condition at the start of 7.6% and an average stack temperature of 559° F., showing that the industry has come a long way since the Cities Service studies a few years ago in Iowa where they found average CO_2 of less than 4%. That was before the war, and before people became conscious of combustion efficiencies.

However, it must not be assumed that all jobs average 7.6 CO_2. Those were the jobs that not only were cleaned both this year and most of them last year, but were handled by dealers careful enough to use instruments.

In other words, 60% of all jobs were cleaned, and 69% of that lot had instrument checks . . . so only 42% of all oil-heating is included in those efficiency figures. There's still a lot of oil to be saved.

TANK SIZES: In checking the possibility of storing larger amounts of fueloil in customers' basements, it is of some help to know that the average customer tank capacity is 426 gallons, on a national basis. It will be lower than that in the East, higher elsewhere.

The table shows distribution of tank sizes as reported. This averages higher than usually assumed, and shows tank capacity about 23% of annual consumption, on the average.

Tank Size	*% of Total*
Under 275 Gal.	4.2
275 Gal.	60.0
Between 275 and 550 Gal.	7.3
550 Gal.	12.5
Between 550 and 1000 Gal.	4.2
1000 Gal.	8.6
Over 1000 Gal.	3.2

In a September issue story in FUELOIL & OIL HEAT, Sentinel Oil Co., Mt. Vernon, N. Y., disclosed average customer tank size of 490 gal., obviously higher than the Eastern average. Sentinel reported 58% of customers with 275 gal. tanks, 22% with 550's, 18% with 1000 gal. size, and 2% with larger sizes.

FUELOIL FILL-UP: By September 1, slightly over 66% of all fueloil customers had had a summer tank fill-up, an unusually high figure compared with a few years ago, and reflecting a combination of good selling this summer and a growing percentage of keep-filled accounts. By regions the September 1 fill-up percentages were: New England 59%; Mid-Atlantic 69%; South Atlantic 57%; Midwest 67%; Pacific Northwest 64%.

FUELOIL PRICES: There has been a lot of discussion over varying fueloil price levels within specific markets. Among the reporting fueloil distributors, approximately 70% say that prices are level, majors and independents alike; slightly under 20% say that the independents are selling above the majors, ranging from .2¢ to .4¢; the remaining 10% say that prices are level except that Jersey Standard and affiliates are selling .5¢ below the market.

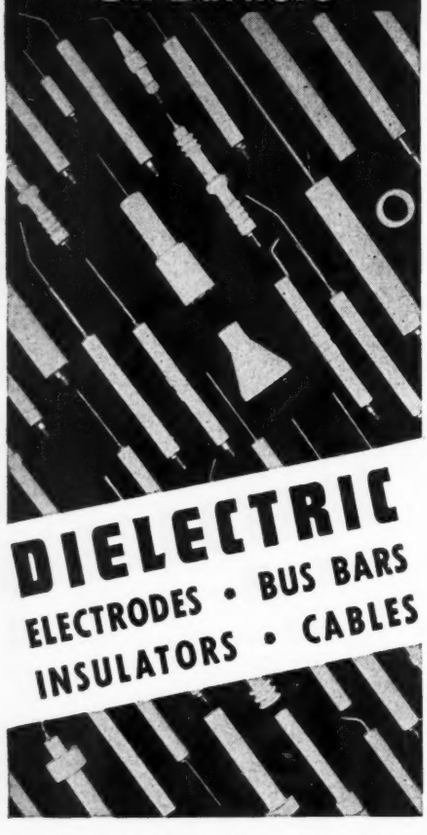
A.P.I. BOOKLET: The American Petroleum Institute has prepared a 32 page booklet on fuel saving for consumers, hoping to get a million distributed this fall through oil companies, who can buy them at 6¢ each. Asked if they expect to buy them, 35% of the reporting fueloil distributors vote "Yes," sight unseen, and the quantities they expect to buy, if representative of the industry as a whole, indicate that about 700,000 copies can be distributed through this type of marketer. In addition, major companies have ordered near a half million copies, so it looks like the booklet is off to a good start.

Oilburner* and Building Permits

OILBURNERS					DWELLINGS			
August		8 MONTHS			August		8 MONTHS	
1947	1946	1947	1946		1947	1946	1947	1946
416	..	..	..	Baltimore, Maryland	281	347	1923	3109
..	..	..	..	Binghamton, New York	10	13	75	85
..	..	..	..	Bloomfield, N. J.	11	..	..	..
372	..	..	..	Boston, Massachusetts	20	44	263	162
166	68	973	452	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, New York	3	26	135	156
..	..	..	..	Des Moines, Iowa	125	115	..	855
..	..	..	..	Detroit, Michigan	680	629	6386	6193
94	132	..	573	Elizabeth, N. J.	3	7	76	16
42	50	250	269	Freeport, New York	..	..	..	..
..	..	..	..	Greenwich, Conn.	26	7	145	137
..	..	..	..	Hackensack, N. J.	2	4	25	53
65	74	1112	542	Hartford, Conn.	..	..	..	..
49	56	330	351	Irvington, N. J.	3	2	18	15
..	..	..	..	Lynn, Massachusetts	4	7	76	41
7	25	213	139	Meriden, Conn.	..	..	..	..
..	..	..	..	Milwaukee, Wisc.	133	119	826	1180
251	89	1200	409	Minneapolis, Minn.	116	156	631	1065
37	20	208	284	Montclair, N. J.	..	..	..	..
..	..	..	..	Morristown, N. J.	..	0	..	1
62	54	331	348	Mt. Vernon, New York	..	..	..	..
48	41	429	344	New Bedford, Mass.	..	..	..	..
0	0	0	0	New Orleans, La.	..	..	..	..
32	55	217	217	New Rochelle, N. Y.	12	4	52	86
..	3895	..	27,826	New York City (total)	..	..	..	..
..	3138	..	23,410	Brooklyn-Queens	..	..	..	..
847	757	6638	4416	Manhattan, Bronx, Rchd	..	..	..	..
71	24	627	245	Norfolk, Virginia	281	24	509	171
2	1	2	3	Oakland, Calif.	..	..	..	..
183	97	..	600	Omaha, Nebraska	..	44	..	197
34	25	164	175	Orange, New Jersey	0	0	5	4
133	117	716	635	Paterson, N. J.	9	12	42	43
..	..	..	..	Plainfield, N. J.	4	4	106	71
89	40	711	260	Portland, Maine	14	8	108	81
1187	328	..	1957	Portland, Oregon	100	128	879	1571
..	..	..	..	Reading, Penna.	3	2	17	80
168	5	1028	262	Richmond, Virginia	99	84	459	892
27	31	..	172	Rockville Center, N. Y.	49	1	129	55
21	19	199	107	Salem, Massachusetts	7	0	32	9
432	78	1740	431	St. Louis, Missouri	38	26	234	221
354	134	1951	859	St. Paul, Minnesota	110	109	671	901
92	13	..	152	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Washington	3	225	1255	1891
..	..	..	..	Springfield, Mass.	36	24	239	425
33	22	240	197	Stamford, Conn.	..	..	..	..
..	..	..	..	Syracuse, New York	..	9	..	84
..	..	..	..	Trenton, New Jersey	0	0	51	5
..	..	..	..	Utica, New York	17	2	47	5
409	270	2095	1531	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	9	4	63	28
217	41	682	407	Wilmington, Delaware	16	3	66	170
133	48	1035	439	Worcester, Mass.	..	..	..	..
5285	2714	23,089	13,322	*Totals*	2224	2134	15,525	18,916
+94.7		+73.3		*Percent Change*	+4.2		—17.9	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

The Most Widely Used Ignition Assemblies for Oil Burners



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INSULATORS • CABLES

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2—They have all Underwriters Laboratories, Inc., approvals.

3—Standard assemblies are available for quick delivery.

4—Assemblies with special insulator and electrode sizes and shapes can be made on short notice.

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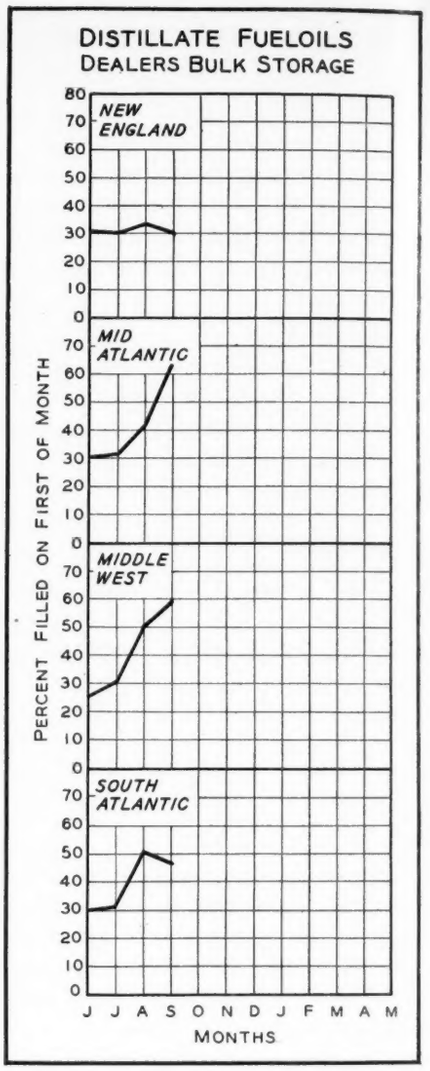
Fueloil Supplies

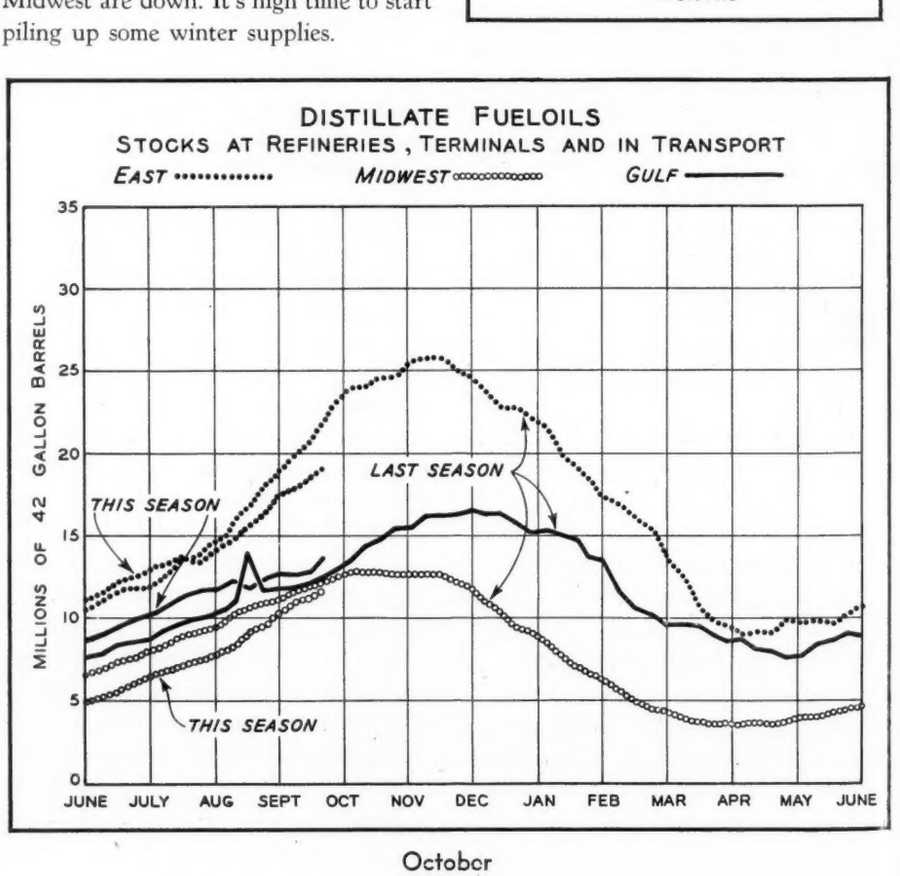
DISTILLATE STOCKS IN THE local bulk tanks of fueloil distributors on September 1 were equal to 54% of tank capacity, a marked rise from 43% on August 1 and 31% on July 1. The upswing occurred in Mid Atlantic and Midwest States, with New England and South Atlantic areas showing declines.

Many reasons are given for not having larger stocks, but the only one of these that occurs in considerable numbers is inability to get more product . . . principally in the Midwest, where 42% of reporting companies mention that restricting factor. The second most important influence is price uncertainty, given as a reason by 14% of the companies along the Atlantic Seaboard. Interestingly, 6% of the companies are in process of adding new capacity to their plants.

Kerosene or range oil stock levels reported by the same group showed bulk storage 34% filled in New England, 35% in Mid-Atlantic, 60% in South Atlantic and 82% in the Midwest . . . for all sections 49%.

Distillate supplies at primary terminals, refineries and in transportation continue at about two million barrels under a year ago. The Gulf is up but East Coast and Midwest are down. It's high time to start piling up some winter supplies.


DISTILLATE FUELOILS
DEALERS BULK STORAGE
NEW ENGLAND
MID ATLANTIC
MIDDLE WEST
SOUTH ATLANTIC
PERCENT FILLED ON FIRST OF MONTH
0 10 20 30 40 50 60 70 80
J J A S O N D J F M A M
MONTHS


DISTILLATE FUELOILS
STOCKS AT REFINERIES, TERMINALS AND IN TRANSPORT
EAST
MIDWEST
GULF
MILLIONS OF 42 GALLON BARRELS
0 5 10 15 20 25 30 35
LAST SEASON
THIS SEASON
THIS SEASON
JUNE JULY AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUNE

Protect Oilheating?

Should Homes Go Cold, or Unnecessary Driving Be Restricted?

by
Robert Gray

THE OIL INDUSTRY must make some difficult decisions. The summer gasoline peak is past, but as we coast down the fall side of the calendar it becomes daily more evident that some petroleum product is going to be sacrificed, come cold weather.

Every family is using larger and larger amounts of total petroleum. More money was spent, more miles traveled on vacations this summer; record amounts of gasoline flowed from the industry, notwithstanding dealer rationing in the Midwest, and a few dry spots.

In supplying the unprecedented need for gasoline, too little heating oil was laid away to make anything like a comfortable showing at this season. Fueloil has to be made and stored up in advance. Refineries cannot turn out enough during the months that people need it for heat, so the level of storage stocks at the start of the heating season gauges the degree of security for oilheated homes.

East of the Rockies fueloil stocks are now two million barrels, or five percent below this time last year. That seems a trivial difference until we recognize that the amount of distillate fuels needed for heating this winter will be at least 20% above last winter and may run up to 25%.

So, at this moment the East and Midwest are ten or twelve million barrels short of being as well situated as last year.

Last winter the Midwest was in trouble by March. People didn't freeze, nor was there much actual discomfort, but the industry took a drubbing in having to limit drops to 50 gallons for weeks on end.

All of the record refinery runs so frequently mentioned in past months have not built up fueloil stocks; the extra product went somewhere else. It's hard for oil men to turn down spot business just to lay away fueloil that won't be needed for six months. Most oil companies have been unwilling to sacrifice gasoline business when they knew that competitors would take it anyway, and thus there would be little actual product saving.

Similarly, the large oilburner manufacturers have recognized real danger in selling too many burners this year, but with a few exceptions they have gone ahead making and selling all they could, for they knew that if they didn't the smaller competitors would.

The 1947 crop of oilburner installations cannot all be fed this winter unless some other oil product takes a cut, away below public demand.

Exceptional Yield Needed

Of course, the refinery ratios will be shifted . . . as less gasoline is needed in winter more fueloil can be made . . . but that has always been the custom. If all oilburner users are to be kept warm this winter, the change in ratio must be much greater than normal. Not only must the refiners turn out 20 to 25% more fueloil than last year during the actual heating months, but they must first catch up the ten or twelve million barrels that are short in opening stocks.

So the oil industry must make decisions. High level huddles are daily occurrences. Nerves are tense as fueloil department managers know that their anxieties are about to burst into realities, and they battle for wider recognition of the public relations value of their product.

That is how the decision must come. By making the most possible heating oil out of every barrel of crude there can be enough, but that will necessitate virtual consumer rationing of gasoline . . . by giving each outlet sharply reduced supplies and educating it to take care of essential needs first, with only doles for the family car.

For generations the oil industry has been a political football; cussing it out will always get headlines, largely because of unorthodox practices in its early history. Some government sleuthing crowd is perpetually on its trail, and while such groups rarely win their cases they do a big press.

What, then, is the public relations value of heating oil, of oilheating in homes, to an industry that knows it must do things to make the public like it better . . . to an industry that is now spending large sums in a Public Relations program. How does heating oil, as a friend maker, compare with gasoline for family driving?

Among the larger companies profit is not the controlling factor. Fueloil prices are up, but gasoline is still more profitable per gallon. Yet over-all profits are high, so the decisions won't lean on that phase.

Oil refiners are big business. With a critical election just a year off they know that much of the campaign will be waged over the problems, the plight of the downtrodden small business man, at grips with big competitors. It's already started, and by both parties. The Justice Department, pushing anti-trust suits against the majors, is Democratic. Senator Wherry, head of the small business hearings in the oil industry, is a Republican.

Industry Needs Friends

When the fur flies, and the industry freshly realizes its need of all the friends it can muster, would it be better to count on the warmhearted support of millions of families whose homes have been made healthful and really comfortable through oilheating . . . or on users of gasoline for non-essential purposes?

The answer may be fence-straddling, shorting both products, but however it goes the decisions are about upon us, because the refineries must switch early to the new schedules, particularly if oilheating gets the nod.

Preventing Loss of Prime

Principles for Steering Clear of Air-Binding Fuel Units

by

J. W. Schulz

"YOU DON'T HELP keep the pump primed by running the return line to the bottom of a buried oil storage tank," said an engineer after he had first heard of the idea.

But after his friend explained the principle, the engineer admitted that it seemed good.

A thorough understanding of the different methods for avoiding loss-of-prime helps an installation engineer decide which method will be his favorite. Also, it helps a service man end service calls caused by air-binding of the fuel units of pressure burners.

You can't expect an oilburner pump to stay primed unless the suction line is air-tight, of course. To produce a line tight enough to be a suction line calls for greater skill on the part of the pipefitter than is needed to produce a line tight enough for steam or water. With steam or water, a very slight leak may do little harm, and besides probably will "make up" so that later there will be no leak. With fueloil, a very slight leak can cause great trouble, especially if the leak is in the suction line of a job which has a buried tank located lower than the oilburner. Further, you have to regard oil line leaks this way to be practical. They never "make up" or become tight; rarely do they stay the same; usually as time goes by they become worse.

Here's how tight a suction line should be. When you test by capping or plugging the ends of the line and applying 100 lbs. air pressure to it, after 24 hours the air pressure should not be lower than 95 lbs. A refrigeration expert appreciates this kind of air pressure test and is familiar with the pipefitting skill that matches it, but usually the pipefitter experienced only in steam and water piping learns much through applying the 100 lb. air pressure test to a few lines which he assumed were tight enough.

It takes more than a tight line to keep an oilburner pump primed, especially where the top of an outside tank is a few feet or more below the pump on the burner. The accompanying diagrams illustrate and explain several methods for making certain there will be no loss-of-prime trouble even where tops of the oil tanks are many feet below the burner pumps.

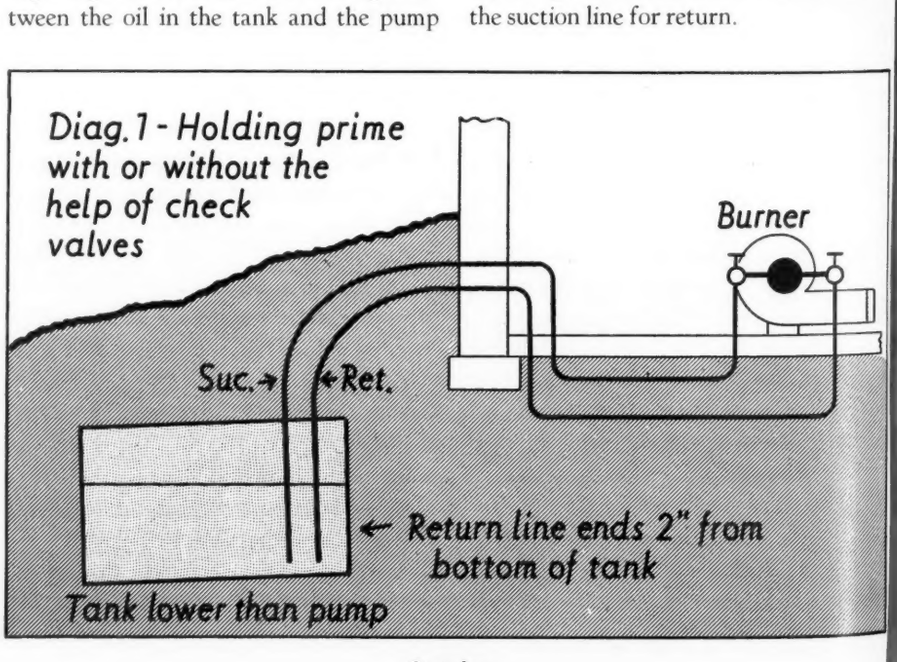
Loss of prime and air-binding are the same thing, of course. When a gear type pump loses its prime, it becomes air bound. A few cubic inches of air in the pumps or fuel units of certain burners causes air-binding, whereas much more air can be digested by other pumps or fuel units before they air-bind and stop providing oil to the nozzles. To obtain fire from a pressure burner which is air-bound, the service man starts the burner motor, then permits the air to escape from the pump or fuel unit, usually by loosening or removing the plug from the opening which is used also for a pressure gauge when a check-up is made on the pressure the pump places on the nozzle.

To prevent air-binding trouble, you arrange to keep the oil pump or fuel unit chuckful of fueloil; you aim to prevent any air from entering the pump or fuel unit even when the burner is idle for weeks or months at a time. The entire suction line must be kept full of oil and free of air. If during a long "off" period of the burner some air enters the suction line of a high-lift installation (where there is perhaps ten feet difference in height between the oil in the tank and the pump on the burner), air-binding may occur when the burner starts.

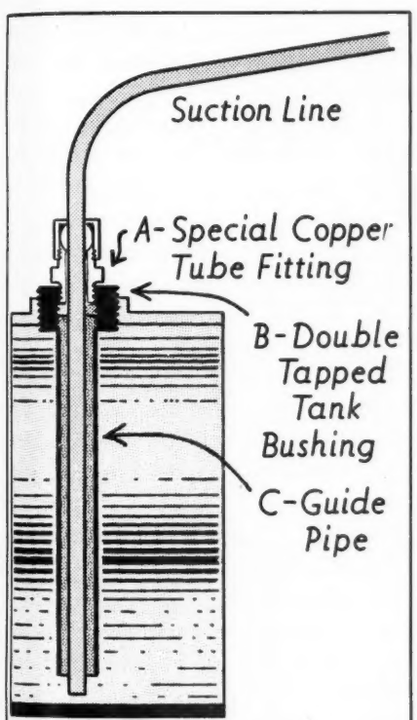
Diag. 1 shows the use of the idea of extending the return line, as well as the suction line, to within about two inches of the bottom of the tank. If, local ordinances permitting, you do as many dealers do and use copper tubing in your efforts to arrive at air-tight oil lines, you should avoid having unnecessary joints and fittings in the buried lines. If possible, use one piece of copper tubing for the run from the tank bottom to the point inside the basement wall, and do this for both the suction line and the return line.

You can run the suction and return lines through the top of the oil tank without having joints at this location by using the method shown in Diag. 2. The tubing slips through the special copper tube fitting (A). Don't fail to provide the guide pipe (C) which makes certain the copper tubing will extend straight down into the tank, and will stay that way.

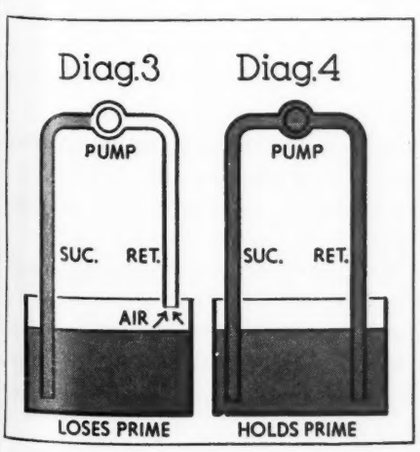
If for any reason you do have unavoidable joints in a copper tube suction line, or if perhaps because of local regulations you use steel pipe for your outside lines and therefore have the risk of suction line leaks in the joints, you will appreciate this feature of Diag. 1. If the suction line develops a troublesome air leak, you can try using the return line for suction, and the suction line for return.


Diag. 1 - Holding prime with or without the help of check valves
Burner
Suc.→
←Ret.
← Return line ends 2" from bottom of tank
Tank lower than pump

Diags. 3 and 4 show the principle behind the idea of running the return line to the bottom of an outside oil tank. With no check valve in the circuit, when the pump in Diag. 3 is stopped, the oil in the suction line will drop back to the tank and air will go to the pump. The air enters the open end of the return line. With the suction and return line circuit of Diag. 4 absolutely air-tight, no air can reach the pump during idle periods. As the end of the return line is covered by the oil in the tank, no air can enter the open end of the return line.



Diag.2 - Avoid a suction line joint at top of tank, and install a guide pipe to keep suction line straight in tank.

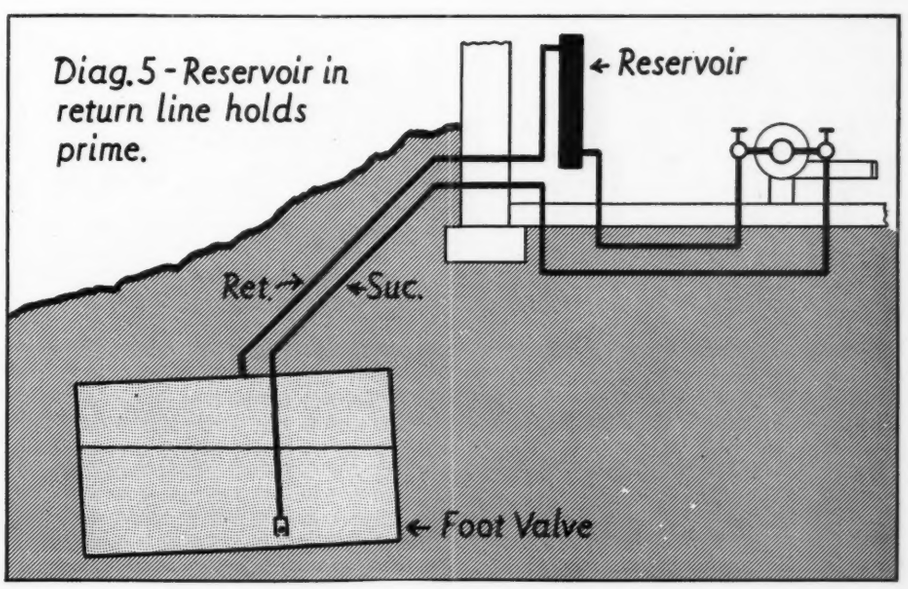


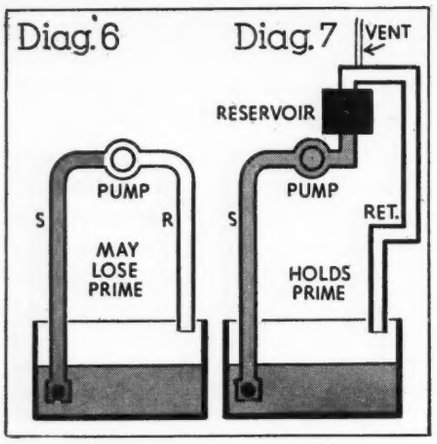
In studying Diags. 3 and 4, notice that the return line in Diag. 4, as well as the suction line, must be absolutely air-tight. And no air must enter the fuel unit or oil pump. A leak in the pump gland would be an air leak with the pump idle, for example, and would cause air-binding. Provide a check valve anywhere in the suction line of Diag. 4 (or Diag. 1), at the bottom of the suction line or at the pump inlet or anywhere else, and the check valve will assist in keeping the pump primed when the burner is idle, even if a slight leak develops in the pump gland or elsewhere in the fuel unit or oil pump, or in the return line. The check valve will do this, of course, only if it holds fairly well when it is supposed to be closed. We recommend that an excellent check valve be used at the basement wall or the burner, in the suction line shown in Diag. 1. It is best to install a good oil line filter or strainer on the tank side of the check valve to keep the check valve free of sediment which may otherwise lodge on the seat of the valve and prevent its closing tightly. You may, of course, install a check valve at the bottom of the suction line, using it as a foot valve, but then you will not be able to interchange the suction and return lines at a later date without uncovering the tank and doing something about the foot valve in the line you want to use as a return line.

The reservoir located in the return line, in Diag. 5, may be 2″ or 3″ pipe about three feet long or longer, or it may be a tank of about five gallons capacity. Diags. 5 and 6 show how it helps keep the pump primed during long "off" periods, even though the check valve in the suction line permits oil to seep back to the tank. With the foot valve in Diag. 6 leaking slightly, within a few hours the air leaking into the open end of the return line will reach the pump, and next the suction line will fill with air. In Diag. 7, considerable oil can leak back through the check valve when the burner is idle (five gallons, for example, if the return line reservoir holds five gallons) before air from the return line will reach the oil pump.

Certain oilheating experts are opposed to the use of a foot valve, declaring that without a screen to protect it a check valve in a tank may not work well because of sediment in it, and a screen in the tank (to keep sediment out of the foot valve) may clog and cannot be cleaned easily. Yet, the system shown in Diags. 5 and 7 is used by certain burner installers because it gives this great advantage. When the burner is idle, there is not a vacuum on the suction line and the fuel unit or oil pump of the burner, there is a pressure. The pressure is given by the head of oil in the return line reservoir, and will cause fueloil to seep out of any small leaks during idleness of the burner. By comparison, in Diags. 1 and 4 there is a vacuum on the circuit of the oil lines and the oil pump when the burner is idle.

Diag. 7 shows a vent at the top of the reservoir. Not used by some installers who use the return line reservoir idea, when it is employed this sometimes takes the form of a 5/16″ OD copper tube that runs uphill from the top of the reservoir to the vent line of the oil storage tank. When used, the idea behind this small





reservoir vent line is to prevent the return line's exerting any syphon effect on the reservoir.

Dealers opposed to the use of a suction line foot valve (located in the oil storage tank) have used the return line reservoir idea along with a suction line check valve located at the oilburner or just inside the basement wall. The resultant system does not keep the entire suction line under pressure when the burner is idle, but it does keep the fuel unit or pump under pressure. This has been helpful with pump glands that did not leak oil to a troublesome degree when the burners operated, but which sometimes drew in troublesome amounts of air when kept under vacuum while idle.

To avoid loss of prime of several pressure burners installed in one boiler room, make certain to provide an independent suction line for each burner. One return line large enough for all the burners customarily is used.

If the burner you handle is optionally equipped with a single-stage or two-stage fuel unit, be certain to obtain a two-stage fuel unit for outside tank installations which may have problems related to holding prime. Similarly for service work, loss-of-prime trouble often can be ended by replacing a single-stage fuel unit by a two-stage unit.

Where you suspect a pump gland of permitting air to enter the pump, try lubricating the pump shaft with generous amounts of heavy motor oil. This should give at least temporary relief from the trouble or aid you in arriving at proper diagnosis of the trouble.

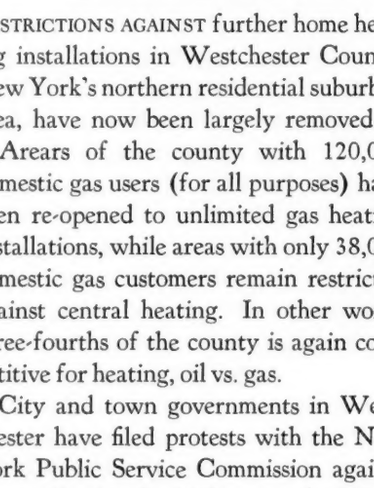
While you may not need the ideas covered by the diagrams in this article for every one of your outside tank installations, because many outside tanks are not located considerably below the burners, it is best to know the details of the best methods for insuring freedom from air-binding trouble. Knowledge of these methods permits applying them with no delay when necessary. Also, the man who knows the unusually effective arrangements for keeping pumps primed can plan all his outside tank installations in a manner that permits easy and inexpensive addition of these arrangements at some later date, should difficulties develop which invite improvements in the piping.

Gas Restrictions Lifted In Most Of Westchester

RESTRICTIONS AGAINST further home heating installations in Westchester County, New York's northern residential suburban area, have now been largely removed.

Arears of the county with 120,000 domestic gas users (for all purposes) have been re-opened to unlimited gas heating installations, while areas with only 38,000 domestic gas customers remain restricted against central heating. In other words three-fourths of the county is again competitive for heating, oil vs. gas.

City and town governments in Westchester have filed protests with the New York Public Service Commission against the application for higher rates by Westchester Lighting Company, chief gas supplier in the county. It is claimed that the proposed new rates will lift gas heating costs as much as 50% for some customers, since the proposed base rate of 70 cents a thousand feet would become effective at 9,000 cubic feet each month.



"You poor darling! Surely there must be some easier way of earning a living than clipping coupons"

Twenty Years Ago

(*From the October issue,* 1927)

Chief subject of discussion among oilburner manufacturers is the length of the guarantee period during which free service is rendered. Haldeman Finnie (Timken) has taken a strong stand for a one year guarantee, against the advocates of the 60 and 90 day warranty.

Robert T. Haslam has resigned as professor of chemical engineering at Massachusetts Institute of Technology to join Standard Development Co., research subsidiary of the Standard Oil Co. (N. J.) He will give up his consulting business which has been widely used by oilburner manufacturers.

M. M. Hirsch, sales manager of the Automatic Burner Corp. is at Philadelphia to open a factory branch at 805 N. Broad St.

Buckley & Scott, Providence and Philadelphia, has taken the distribution of the Aetna burner in connection with the Nokol.

Aetna Automatic Oil Burner, Inc., Providence, R. I., has been merged with the American Nokol Co., Chicago. Morgan J. Hammers is president and John Scheminger and A. B. Frenier are vice-presidents. All models will be manufactured at Chicago.

Parkman-Wasgatt Co., Boston, distributor for Sword burners, has issued a challenge which has been accepted by Home Appliance Service Co., Boston, distributor for Fluid Heat. Burners are to be tested under the supervision of M.I.T. with the loser paying all expenses and donating $1,000 to any named charity.

Polar Wave Ice and Fuel Co., St. Louis, has started to handle heating oils in connection with its established coal and ice business.

General Utilities Corp., Philadelphia, has taken over the distribution of the Williams Oil-O-Matic burner for that area. Harry Liehr is in charge of sales.

The Bennett-Allison oilburner has been put on the market at Omaha, Neb. It is a mechanical draft, pot type burner using a swirling flame.

Charles H. Bear, a retired dry goods merchant of York, Pa., has received a listing for the Bear oilburner from Underwriters Laboratories, and has formed the Bear Oil Burner Company to market the burner.

Fall River Fueloil Distributors Add Half Cent for Burner Service

DURING THE PAST TWO YEARS, there has been a great deal of discussion within the oilheating industry of possible plans for equalizing the cost of burner service between all customers. The topic was explored at the Philadelphia Convention of O.H.I. in the spring of 1946 and again last fall in a series of round-table meetings in eastern cities, sponsored by Clyde Morrill of the Atlantic Coast Oil Conference.

One of the methods frequently suggested was that the cost of burner service be added in the price of the oil. In the years before the war, a few companies had tried this, and found that they made out fairly well by charging an additional half cent a gallon.

In those years the intent in such a plan was not so much holding down the cost of winter service, but rather in insuring near-perfect oilheating by forcing every customer to have a summer cleanup and tuneup, and in general good preventive maintenance.

More recent thinking, however, has been generated by a desire to get away from excessive service costs for customers who happen to run into bad luck, for example, customers who would need a new oil tank, combustion chamber, or other expensive servicing.

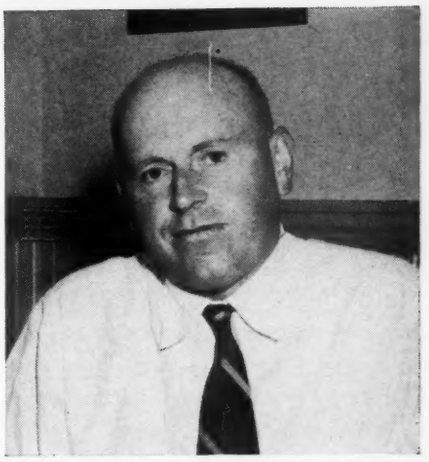
While this whole concept seemed relatively new it was not generally known in the industry that something similar has been done in the Fall River-New Bedford area of southern Massachusetts for at least twenty years. All of the fueloil distributors in those two markets add a half cent to their fueloil price to cover burner service. They do not explain this to the customers, but rather gave the impression that service is free.

One company started this plan as early as 1917, using it on heavy oil. It was difficult in those years to persuade owners of large buildings or industries to turn away from coal to residual fuel. Many of them with traditional New England caution suspected that they might run into a lot of expense on such a piece of machinery. Thus, the half cent added to the residual fuel price to cover any service expense speeded the sale of such installations.

At present, the arrangement is used primarily with home heating oils. The service furnished embraces a good summer cleanup and tuneup job, plus all emergency service but does not include any parts.

To learn how this arrangement works with the average fueloil distributor some questions were asked of Edward S. Bliss, who is general manager of Atwater Fuels, Inc., Fall River, and a director of the O.H.I. of New England. Bliss has a relatively modest fueloil operation, indicating that his experience would be similar to that of most of the companies in the market, and more representative than if figures were taken from one of the few largest companies.

Actually, Atwater Fuels is a very large company, primarily in the coal and coke business, just having gone into home heating oil in recent years. With about eleven hundred oil customers they deliver just under two million gallons of No. 2 fuel. To render the service is costing them 1.09 cents a gallon, primarily because they have a well staffed and well equipped service department that could handle much more work with little added expense. For example, service department overheaded amounts to 65¢ an hour, and would increase only a little in total dollars if twice the volume was handled.



Edward S. Bliss, *Atwater's general manager, and below, its Main St. building.*

The average account uses seventeen hundred gallons, which means that servicing that account costs $18.53. Total parts sold during the past twelve months average just under three dollars per burner, or in other words thirty-three hundred dollars worth of parts were sold while the company was caring for eleven hundred customers.

Fall River fueloil margins are high enough to take the service loss without great hardship, since fueloil costs the barge operators 7.3¢ and sells for 10.7¢, a spread or 3.4¢. The sale price of 10.7¢ includes the half cent loading for service. The Atwater company sells G. E. burners and Richfield fueloil. In addition to its general office building in the lower part of town, and its coal terminal on the river, it has a retail sales room up on main street, where it takes orders for coal and oil and sells a full line of G-E home appliances.

These Combustion Heads

The Application and Adjustment of Controlled Air Delivery

by

Charles H. Burkhardt*

In the article last month, the general theory of the control of air delivery and the necessity for it in connection with catalytic oil was discussed. In this article the actual application of the controlled air delivery and the mechanical methods for achieving this control and regulation will be taken up. At present there are a considerable number of turbulator heads, combustion heads and air diffusion devices appearing that are successfully attacking this problem. It is a practical impossibility to discuss the design and the adjustment of every one of these heads and for this reason only two specific heads will be described. This article is not to be regarded as an endorsement of either one of these heads, nor does it attempt to set up any claim that either one of these heads in any manner or means is superior to the other. The truth is that both do an excellent job, each using a completely different application of air delivery principles.

ANALYZING the application of methods and studies in air delivery, it becomes apparent that there are two different applications involved, either one of which, at this point, seems to be as good as the other, there being no laboratory evidence to show otherwise. The differences in these principles and the mechanical application of them can be set down in easy order.

First, there is that type of combustion head which uses the "parallel-high velocity principle" as shown in illustration No. 1. In this application the air travels in a hollow cone-shaped spray in the same general direction as the oil spray. This results in the union of the oil and air due to the turbulence created and the consequent mingling of the oil and air molecules as they collide in their forward movement at varying speeds. As soon as combustion begins, the whole mixture becomes a whirling vortex of oil and air with the heat generated carrying the reaction to its conclusion. The pioneer application of this principle to the burning of catalytic oil is the Shell Combustion Head, a product developed by the Shell Development Company, Inc., under whose auspices licensees may manufacture the device for incorporation with their burners. At the present time nineteen burner manufacturers have been licensed to use this head.

New Air Control Device

The alternate principle, that of "interceptory-high velocity air delivery," in which no air initially travels parallel to, or in the same general direction as the spray but instead is forced diagonally into it, has been applied by the Preferred Utilities Manufacturing Corporation to a new type air control device that they will bring out in the near future. This head will be included in the design of their high pressure gun type burner. As mentioned above, its differences when compared with the Shell head will lie in the fact that the air initially intercepts the oil spray at right angles instead of in a merging stream. Thus the mixture is achieved through the interception of the oil spray by the air, as shown in illustration No. 2.

We will find that since each of these air control devices described use a different applied principle they will naturally be considerably different in their design and present in their adjustment, because of this, different problems to the serviceman. One of our purposes here is to give as completely as possible, specific instructions as to how each head is to be adjusted, so that it will perform properly and result in the elimination of a large amount of excess air, the real secret in obtaining high CO_2 readings. The success of these air control devices in raising the CO_2 to exceedingly high ranges is due mainly to their ability to achieve a full mixture with a minimum of air and a maximum of oil. They thereby cut down a large amount of excess air that heretofore has been considered a necessary evil in the combustion of fueloil by high pressure gun type burners.

In order to properly adjust the Shell Combusition Head and enable it to perform with the high CO_2 readings which it was designed to produce, the following adjustments should be carefully noted and checked by the serviceman. The figures here given that concern any of the adjustments have been arrived at by the Shell Development Company as a result of long research and experimentation and should be accepted as the absolute conditions in achieving the high rated performance of the Shell Head.

The designers of the Shell Head recommend that it be used in combustion chambers that are square or rectangular, as it is the head which shapes the flame and not the chamber. It is also recommended that the head be used with nozzles producing an 80° hollow cone spray angle, as the spray produced by the nozzle has a definite effect on the efficiency and noise.

Adjusting the Head

In initially adjusting the head (see illustration No. 3) the secondary air adjustment rod (1) is rotated until the secondary air cone assembly is in such a position that the oil nozzle is ⅜ of an inch back from the plane of the outer secondary air cone. This distance can conviently be measured by placing a rule or similar straight edge across the end of the outer secondary air nozzle and measuring from the tip of the oil nozzle to the straight edge with a small rule. The electrode holder (4) acts as a stop to keep the inner air nozzle from being moved too close to the electrodes just as the nozzle adapter prevents moving the secondary air assembly too far forward.

The electrode setting should be made so that the tips of the electrodes are set 1/16th of an inch back from the tip of the oil nozzle and at least ¼" from any grounded metal surface. The tips should be from ⅛th to 3/16th of an inch apart. Care should be taken that the machine screws which secure the U-shaped clamps holding the electrodes, are screwed only tight enough to keep the electrodes from rotating.

*Head, Automatic Heating Dept., YMCA Trade and Technical School, New York.

The air supplied to the secondary air assembly (2) comes through the secondary air inlet holes (3). The air supply can be varied over a considerable range by varying the degree of the register of the holes. The amount of the secondary air required will vary with the size of the fuel oil nozzle as indicated in the following table.

Nozzle Rating GPH	*Approximate Secondary Air Adjustment*
0.75	Holes 1/3 open
1.00	Holes 1/3 open
1.35	Holes 1/2 open
1.65 or more	Holes fully open

(For burner with static no delivery pressure of 0.50 inches of water.)

Excessive secondary air will result in a decrease in the efficiency of the burner and a consequent lower CO_2 reading whereas a deficiency in the supply of secondary air will result in the flame "striking back" and burning in a bright ring just in front of the secondary air nozzle. The required opening will vary with the static pressure developed by the burner fan, hence the values shown above are approximate. The ring covering the secondary air inlet holes is tightened in place by locking screws.

After these preliminary adjustments we are now ready to adjust the fan shutter and fire as noted in the table below.

Nozzle Rating, GPH	*Fan Shutter Opening*
0.75	1/8-1/4 open
1.00	1/4-1/2 open
1.35	1/2-3/4 open
1.65	3/4-Fully open
2.00 and more	Fully open

After this fan shutter adjustment, the secondary air-oil nozzle assembly is then adjusted to approximately the mid point in its adjustment range by rotating the adjustment knob (1) and the burner is started. If the correct adjustments have been made the flame will be in the form of a hollow cone with the vortex of the flame cone two or three inches from the tip of the fuel nozzle.

The position and shape of the flame as it is related to the nozzle should be visible as the head produces a short wide flame. If the flame is not in a position to be seen because of the boiler design, the use of a flame mirror may be regarded as absolutely necessary. In order to have a reference point to work from with regard to the proper flame structure, rotate the adjustment knob counter-clockwise until the flame changes from a quiet burning cone shape to a blow torch type flame that emits a roar. This point shows that flame control has been lost and furnishes the reference point from which final adjustments can be made. Now adjust the knob in a clockwise rotation until the hollow cone form is again assumed by the flame and stable burning is established. In most cases this has been found to be the optimum setting for this adjustment. The burner should now run to establish draft conditions and adjustments on the draft regulator should be made to give approximately 0.025 inches of negative draft. CO_2 readings over the fire and at the breeching should now be made. Any appreciable difference in the reading at the two points demonstrates that air is leaking in from points that should be sealed. Top efficiency is indicated when on opening the door quickly, a few long flame tips are visible *without* smoke. The CO_2 should exceed 10%. Failure to obtain a high CO_2 content in the flue gas may be due to (1) a nozzle with poor operating characteristics, (2) improper secondary air adjustment or (3) air leaks in boiler.

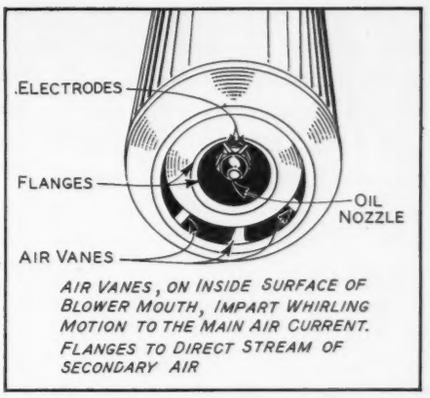

ELECTRODES
FLANGES
OIL NOZZLE
AIR VANES
AIR VANES, ON INSIDE SURFACE OF BLOWER MOUTH, IMPART WHIRLING MOTION TO THE MAIN AIR CURRENT.
FLANGES TO DIRECT STREAM OF SECONDARY AIR

Illustration 1. **Shell Combustion Head** *installed in blower mouth. Relative positions of oil nozzle, flanges and blower mouth are mutually adjustable.*

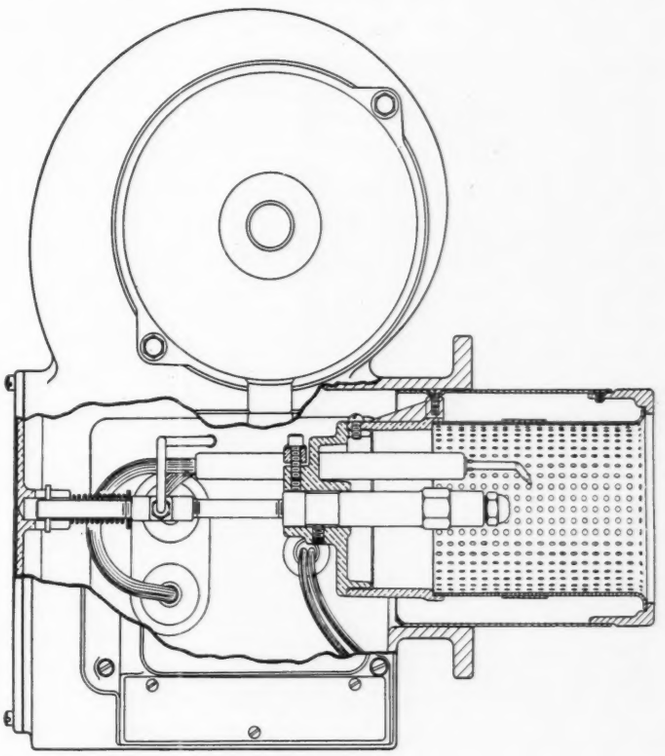


Illustration 2. New burner of **Preferred Utilities** *Mfg. Corp., which gets the mixture through interception of the oil spray by the air.*

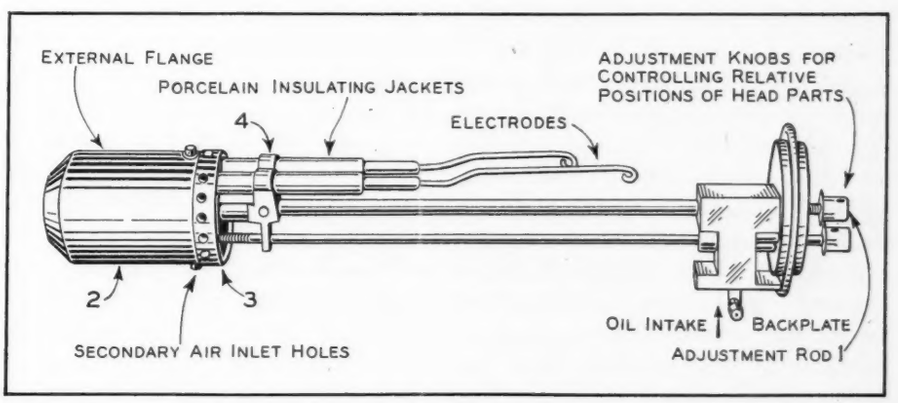


Illustration 3. **Shell Combustion Head** *removed from burner. Entire unit fits into blower tube. Forward portion fits into blower mouth against air vanes, forming channel for main air*

The head that uses the "interceptory high velocity" air delivery principle, as shown in illustration No. 2 is the Preferred Utilities Combustion Head. This head which eliminates the conventional air cone from the burner completely is unique in design inasmuch as all air that passes through to the nozzle must pass through the air control device, there being no primary and secondary air adjustments at the head. It is composed of a circular cylinder of stainless steel built to withstand high temperatures, approximately 3½" to 4" in diameter and of various lengths depending on the burner capacity. As can be seen from the illustration, the cylinder is perforated throughout its entire surface with small holes uniformly distributed. The size and number of holes is varied with rate of firing although a given perforated cylinder will serve rather broad ranges of firing rates.

Vaporizing Action

As the forward part of the cylinder is flanged and fits tight against the end of the burner gun, with no opening for air to be emitted at this point, it is necessary for all air in the blast tube to change its direction 90° and pass through the holes with high velocity to intercept the oil spray at right angles. This results in the fire burning back within the cylinder, but at the conventional distance ahead of the nozzle. In a few seconds after ignition has been achieved, the cylinder becomes hot enough to heat the air entering the oil spray to approximately 150° F., resulting in a vaporizing action which increases the velocity and thoroughness with which the oil will burn. In other words, this perforated cylinder is a precombustion chamber in which the air is heated before it reaches the oil. It then intercepts the oil spray on the diagonal as all air enters at a right angle to the spray. This heated air is at a high velocity due to the venturi effect created by the air passing through the small perforations and is broken up into many small jets having sufficiently high velocity to penetrate the oil spray. Because of this, a thorough mixture occurs at all points of interception with an absolute minimum of excess air being involved. The CO_2 readings are therefore in the high ranges.

As can be seen from the illustration there is but one adjustment to this interceptory type head, that is the normal fan shutter adjustment, as is found in the conventional burner. The nozzle and electrode assembly can be removed without disturbing the head itself which can be considered a permanent and integral part of the burner construction. If for any reason this head is removed it must so be replaced that the flange fronts are entirely flush against the front of the burner blast tube. In this way, no air is able to leak out between the cone and the blast tube. Ignition adjustments are standard. It is expected that this cone will render the burner adaptable to the use of ordinary house gas and experiments along this line are now progressing.

Wilson Puts Fueloil Demand On Par with Gasoline, Diesel

INCREASED DEMAND for heating oils should be viewed with no more alarm than the increase in gasoline or diesel oil, Dr. Robert E. Wilson, chairman of the board of Standard Oil Co. (Ind.), told a Chicago Petroleum Public Relations meeting, September 25. Competition among buyers must eventually determine who gets what products, he pointed out.

"Some recent statements and inquiries emanating from Washington have implied that our industry should have warned the public specifically against installing new oilburners even when building new homes," Dr. Wilson said. "I do not believe this point of view is sound in a free economy and I am confident that it is not good public relations. The fact is that the industry will be hard pressed by the *combined* Midwest demands for petroleum products, and not by any particular one. It does not seem to me that the industry should single out any particular class of customer and indicate that they will be the ones to be cut off. Why pick on the owner of a new home with a new oilburner? Would it not be equally logical to deny the use of distillates as diesel fuel for new locomotives, or tell the motorist, trucker or farmer that he cannot have additional quantities of gasoline for his new equipment? We should not presume to tell any particular class of consumers that they must go without while others get what they order."

Citing the difficulty in increasing transportation facilities due to seel shortages, Dr. Wilson said that work now under way is expected to increase pipeline movement of crude into the area by 30,000 barrels a day by the end of this year, and 240,000 barrels a day of additional capacity will be finished sometime next year. He expects these additions to transport capacity will be adequate, barring a further sharp upturn in demand.

"Until recently," Dr. Wilson warned, "distillate fuels were largely by-products which refiners normally produced in moderate amounts and sold for what they would bring. Last year's heavy demand, which for the first time caused the diversion into the fueloil market of large quantities of good cracking stocks which would normally have been used to make gasoline made refiners realize that such diversion was expensive and that only higher relative prices would justify increasing distillate yields to the levels which appear necessary to meet prospective demands. Fueloil users are today in effect bidding against gasoline users for available supplies, and price, the regulator, will continually tend to adjust the yield of various products to correspond to demand."

New Oil Pool By Phillips

PHILLIPS PETROLEUM CO. has discovered what company officials believe to be the biggest new oil pool found in west Texas this year.

The company's No. 1 McEntire has been taken down approximately 8,500 feet and has penetrated 502 feet of oil sand in the Ellenburger zone. The well recently was showing 110 barrels an hour on drill stem test as drilling continued.

The Phillips discovery is located midway between the Goldsmith and Andector pools in the northwest part of Ector County on the Embar Ranch lease, in which Phillips owns 8,234 acres.

A Look at Service Profits

You Do Not Have to Lose Money on This Department

by

Arnold R. Beardsley*

SERVICE management, generally, is seeking relief from mounting losses in higher service charges, or increasing mark-ups on fueloil prices, according to our contacts with the industry. Both these recourses are unsound and run counter to the best interests of the fueloil business. The causes of losses in the service department lie in the ineffective utilization of service manpower. Price raising is no substitute for good management. Our thesis is that any oilburner department is entitled to a fair day's work from its service organization for a fair day's pay.

In the August issue we examined a representative oilburner service division, one considered to have been doing a good job over a period of years. We pointed out the causes of their high service losses. In typical round figures these losses averaged $5.00 per account per year.

We stated that a fair day's work is an average of either eight service calls a day, or four overhauls a day. If these standards are maintained—and the quality of calls is kept high so as to reduce repeat calls to a minimum—the greater part of the present losses would be removed.

Does the 8-4 formula set too high a standard of performance? Is it too exacting—too difficult for the average service mechanic?

Let us look at one small company—the Hanney Fuel Oil Company of Brooklyn, owned and operated by Thomas F. Hanney. His men give him an average of 10 service calls a day or 4 to 5 overhauls. This performance is 60% to 70% better than the average. And this performance is further enhanced by the fact that men working on the overhaul program include one to two tank cleaning jobs per day, paying $7.50 each. Otherwise, this performance is equivalent to receipts averaging $25.00 to $30.00 per day per man.

This compares with a usual gross return of $15.00 to $18.00 per day per man. Revenue from sale of parts and equipment is not included in these figures.

Naturally the question arises: How good a service job is being done? The practical answer is that repeat calls are relatively few, and, more important, his turnover of fueloil accounts is less than ten (10) per cent a year. Furthermore, his customer list is growing—without direct solicitation—at a fairly rapid rate.

Perhaps the soundest evidence of this is that Hanney started in the winter of 1939 with 7 fuel oil accounts. In spite of wartime difficulties and rationing, his fueloil sales had risen to 2,998,000 gallons in 1945, 4,619,000 gallons in 1946, and is estimated to reach 6,000,000 for 1947.

Does Hanney make a profit by overcharging his customers? Over 70% of the company's business is on the $15.00 annual contract guaranteeing parts and services. The industry throughout the country considers this to be a fair charge. It should be noted too, that an unusually large proportion of customers sign up on this form of service contract with no sales pressure or direct solicitation. The remainder of his customers on the pay-as-you-go plan are charged $2.50 for each service call with a reasonable time charge for time over one hour.

Tank Service $7.50

Many of his customers—approximately 1 out of every 8—buy a tank cleaning job and a year's tank guarantee for $7.50. Service men on the overhaul program complete one and sometimes two of these jobs a day along with four overhauls.

Service men are not required nor encouraged to sell service contracts or tank cleaning jobs and no commissions are paid when they bring in such business. It appears therefore that his customers are getting a fair break.

Obviously high operating efficiency is not secured by setting high standards and demanding results. The human equation is the intangible problem that must be solved. And, in handling this, apparently, lies much of Hanney's success. The background of the man, his enterprising courage, his commonsense, and the respect which these qualities inspire in any organization are a strong factor.

Hanney started in the fueloil business the hard way. Earning $27.50 a week in 1939, he realized that payroll deductions would never secure the financial or social security that he was looking for. He decided to do something about it, and took a night job as a dispatcher in a public utility so that he could work for himself in the day time. He then bought a fueloil truck and began building up a kerosene route.

Thomas F. Hanney

By the end of the year, he had a kerosene route, and eight fueloil accounts. "Every new account was a conquest. I was elated every time I got a new one," says Hanney.

The next year, having nearly paid for his truck, he quit his night job and decided to sink or swim in the fueloil business.

Then he found that you wouldn't progress in the fueloil business without servicing your oil accounts. So he turned his hand to oilburner servicing—and learned this the hard way too. As he says, "The first time I took an oilburner apart and re-assembled it, I had two parts left

*Staff Engineer, The Emerson Engineers, New York, N. Y.

over." But by dint of reading, trying, and the help of manufacturer's representatives, he became a competent oilburner service mechanic,—on his own admission.

Today, excluding his stenographer, each one of his force of eighteen employees has served his time as a serviceman and fueloil truck driver. And, interestingly, his ratio of total employees to total customers is less than one to a hundred. This is an important criterion to use in evaluating your own operating efficiency.

His servicemen, installation mechanics, and truck drivers, are paid $65.00 a week minimum when experienced. Their work week is 40 hours in the summer, and 48 in the winter. The usual overtime rates are paid. Small one-half ton trucks are supplied to his servicemen and installation crew, and all men report to the plant before starting and when quitting work. These men are not unionized.

Absenteeism Disappears

Time off and absenteeism is not a problem with this company. Each employee is allowed seven extra days for vacation, in addition to the regular two weeks, if no time is taken off. Every work day lost counts against the seven allowed days. Since the introduction of this plan early this year, absenteeism has disappeared.

Hanney believes in advertising and this is evidenced by the prominence that the name Hanney Fuel Oil Company has in Brooklyn. He maintains 6 large painted outdoor signs of the order of 40 by 20 ft. featuring his guaranteed $15.00 annual service contract and the brand name of his fueloil. These signs are well-located on the city's main traffic arteries and are supported by six billboards of similar character which are moved to new locations every month. In addition, newspaper space is used usually—in full pages—5 times a year. "I never take newspaper space to tell my message, unless I can afford to take a full page," says Hanney. And for extra measure he uses direct mail on a list of 50,000 known oil users. "I would rather put my earnings into advertising than to keep it in the Bank," concludes Mr. Hanney regarding his advertising activities.

Mr. Hanney, in his early thirties, is one of the youngest men in the business, but he is already making plans to train his assistants to carry the load alone. He wants no indispensable men. They have frequent meetings outside working hours when they discuss future plans and present problems. He knows already that there comes a time in any growing company when managerial talent becomes diluted, enthusiasm wanes, and overhead grows, so that well planned steps must be taken to preserve the early enthusiasms and vigorous morale. His office door is always open and he praises his men who come in to brag about their day's work. They still like to do it, and he still loves it.

Hanney *has five new Macks of 2,500 gal. size.*

He requires his truck drivers to deliver two full loads a day, and they take off from work as soon as they are through. They frequently get through by two or three in the afternoon. When he asks them to deliver a third load, he recompenses them at the rate of ½¢ a gallon for this trip in addition to regular pay.

On the basis of the full truck deliveries six days a week for 52 weeks, his trucks are in use 75% of the available time, and gallonage delivered for one year per truck is 875,000 gallons compared with 350,000 gallons for the average fueloil truck. On this basis the Hanney Fuel Oil Company accomplished 250% more with a fuel truck than the average run of the field.

Hire Trucks At Peak

This Company gets economical fueloil deliveries throughout the year by using his own five trucks for his year round revenue, and hiring trucking services for the peak winter business. He has found that it is worth paying nine-tenths of a cent per gallon for this service.

They make no attempt to service their own Mack trucks, but turn them in to the local Mack service station when the need arises, and for a regular monthly overhaul. Truck service work is performed at night, so that with rare exceptions their trucks are always operating during the day.

In an area where the Orsat combustion efficiency test is not too widely used, this company has now equipped its service men with new testing equipment so that the customer may derive the fullest possible value from their fueloil purchases.

In this way the Company expects to effect a 10% saving in fuel consumption on his present accounts and, under present conditions, this should mean a saving of $20.00 a year for his average customer.

In the late thirties, Joseph M. Dodge, President of the Detroit Bank, referred as follows to the principles laid down by Harrington Emerson forty years ago:

"Management consists of the technique of using established principles and adapting them to special and changing circumstances."

Motor Fuel From Coal Gas, A New German Process

A GERMAN PROCESS for enriching coal gas to render it suitable as a motor fuel is described in a report now on sale by the Office of Technical Services, Department of Commerce. The process, which involves the catalytic synthesis of methane from the carbon monoxide and hydrogen constituents of the gas, was developed by the German firm Ruhrchemie A. G.

Another firm, Ruhrgas, A. G. planned to set up filling stations to process and dispense the gas throughout Germany. The investigators, who prepared the report for the British Intelligence Objectives Sub-Committee, obtained detailed information about the process from technical experts of these firms.

Midwest Fueloil Outlook Grave, Minner of Shell Tells Senators

AT THE SENATE SMALL Business Committee hearing in Omaha on September 24, J. L. Minner, fueloil department manager for Shell Oil, New York, told Senator Wherry and the other members of the committee that his company views with grave alarm shortages of heating and diesel oils in territories where transportation facilities are temporarily inadequate.

Concentrating the impact of his remarks on the Midwest situation, Minner, in a 4,000 word prepared statement, also urged manufacturers of oilburners and diesel equipment to slow down the sale of any equipment that creates a new demand for fueloil, until the supply situation is improved.

Shell had been asked by the chairman to appear and answer two general questions . . . first, what was the company's policy on fair distribution of its fueloil supplies in the Midwest, and second, what efforts were being made to increase the supply of fueloil available to the area. The first question originated through requests of some fueloil distributors to learn if they were being cut too deeply by majors.

With reference to that point, Minner explained that his company was one of the largest suppliers of heating oil in the Midwest and probably supplies a greater volume of these products to distributors than any other company. Far from discriminating against distributors, he further pointed out, Shell markets most of its fueloil through these outlets . . . mentioning Chicago, where 92.4% of its distillate heating oils go through independent outlets and only 7.6% represents direct sales; St. Louis, where the ratio is distributors 71.8% to direct sales 28.2%; Minneapolis-St. Paul, where independent marketers get 85.9%, to company sales direct of 14.1%.

In outlining the company's distribution policy for this season, Minner said that in June all outlets were formally notified that they would be given as much kerosene and distillates as last season, adjusted to normal weather, and that this would be increased wherever possible. One reason that a large increase was impossible this season, the statement continued, was that last season Shell increased its kerosene-distillate output 36% over the 1945-46 season, contrasted to the Midwest industry's average increase of only 20% . . . Shell carrying a disproportionate share of the load in the interest of the oilheating public, and at the expense of other products.

During the 1946-47 season, Minner explained, his company in Midwest refining operations produced an average kerosene-distillate yield from crude of 26.7%, whereas the overall Midwest industry yield was only about 21%.

All Demands Are Up

Estimating 150,000 new central heating oilburners, and twice as many pot-type space heaters going into the Midwest this year, Shell believes that the problems of last winter were "only a mild prelude to those which may develop during the coming season." In addition to the swelling oilburner population, Midwest diesel needs are 25% above a year ago, while general industrial fueloil needs are up 21%, much of this being emergency needs for oil where other fuels had failed, but which if not supplied would throw thousands out of work.

Refinery strikes cost the public 12 million barrels of oil this year, including 5 million barrels at a Shell plant.

Outlining five steps for short range relief now started by the company, Minner placed emphasis on the facts that crude is being brought from West Texas by tank car at a cost far above normal pipeline transportation, that gasoline production is being restricted below demand, that refined products that regularly move from the Gulf Coast east by tanker are now coming to the Midwest in tank cars at excessive cost, that transport trucks have been substituted for tank cars on all short hauls, and that refineries are being run at more than rated capacity, not normally wise practice.

In long range preparations, three new crude and products pipelines were listed, all now under construction or contracted for, plus new construction at refineries. The statement then went into detail on anticipated supply troubles . . . quoting—

"While waiting for such projects to be completed, however, the fueloil situation in the Midwest has progressed to a critical stage. The industry's stocks tell the story simply and dramatically. According to American Petroleum Institute reports, Midwest stocks of kerosene and distillate fuels on September 14, 1946, totaled 16,298,000 barrels; on September 13, 1947, only 15,607,000 barrels, despite this year's greatly increased crude runs.

"Thus, in the face of demands likely to total 25% higher than last year, the industry has stocks 691,000 barrels below last year's level. To be in a position comparable with last year the industry in the Midwest should now have 20,400,000 barrels of kerosene and distillate stocks on hand, or five million barrels more than we have.

"To dramatize this shortage, let me put it another way. This volume of fueloil would provide sufficient heat for over 100,000 homes in the Midwest for the entire winter. Only a perfectly coordinated manufacturing-transportation supply program can close this five million barrel gap."

Distributors' Help Needed

Urging fueloil distributors to make their customers aware of the problem, and to plan now for fair distribution of the oil they will get, Minner then swung to recommendations to manufacturers—

"Shell is soliciting the cooperation of manufacturers of oilheating and diesel equipment in slowing down sales of equipment which creates a new demand for fueloil, until the supply situation is improved. We have hesitated to take this position, for these are the firms which actually create our business for heating and diesel fuels. Shell has spent hundreds of thousands in research in these fields, and has worked with these manufacturers to help expand their sales.

"Now, however, we feel that the situation has become so serious that we would be remiss in our obligation to them if we failed to advise of the danger ahead."

Recognizing that questions are being asked as to why slow down only oilburner installations, Minner explained that his company is daily refusing new diesel business, that it recognizes heating oil as being more essential to health and well-being than pleasure driving, and that it has been restricting gasoline sales in the Midwest for the past four months.

Calculations for Estimating

A Simplified Method of Getting Figures on Heating Requirements

by
Mitchel Landau

The method described here is a quick way to get an estimate of heat loss, and is not recommended as a substitute for other, more exact calculations which should be used for actual heating plant design. It is presented in an attempt to save dealers' time and money before they have the contract.

Mr. Landau is completing a new set of tables which combine the three steps in this article. All manipulation is eliminated. If there is a sufficient demand for them, these tables may be published when completed.

Too much time is spent on engineering before a dealer has the heating job. After an order is signed the detailed engineering, design and layout become part of the cost but until the order is placed you can save much time and safely estimate costs to submit a price to the customer. The heating requirements of the *average* residence may be accurately and quickly determined by using figures that are remembered easily and calculated mentally. Most homes in the same community have the same type of construction which may be considered average.

The method described in this article provides an accurate, quick *estimate* of requirements. For actual design and installation the more precise procedures should be used as recommended by the American Society of Heating and Ventilating Engineers, the National Warm Air Heating and Air Conditioning Association, the Institute of Boiler and Radiator Manufacturers, and the manufacturers of the equipment being used on the job.

First Step. Measure the rooms as usual. This gives us the cubic contents, areas of exposed walls, areas of windows and outside doors, areas of walls and floors with unheated spaces on the other side, areas of top floor ceilings, and supplies information regarding insulation, storm windows, etc. With this data tabulated, we proceed.

Second Step. Multiply the Glass Area, Net Wall Area, Air Change, and any other items which apply, by the figures in Table No. 1. The Air Change is the Cubic Contents of the room adjusted in accordance with Table No. 2.

Using these tables, here is how these figures may look for most first floor rooms.

Example:

Glass Area	x 80	= BTU
Net Wall Area	x 20	= BTU
Air Change	x 1½	= BTU
	Total	BTU for room

It is as simple as that. You will find that the figures in these tables are easily remembered. Also, they lend themselves to mental calculations eliminating a great deal of pencil work. Below is a comparison between the accepted BTU method and this simplified plan.

Comparison of Methods

Living Room, first floor — dimensions 15 ft. x 20 ft. x 8 ft.
Exposed on one 15 ft. side and one 20 ft. side
Three windows 3 ft. x 5 ft. — one door 3 ft. x 7 ft.
Construction 8 in. brick, furred, lath and plaster
No insulation — no storm windows

Standard BTU Method

Gross Wall Area	— 280 sq. ft.				
Glass Area	— 66 sq. ft.	x 1.13	x 70	=	5,220 BTU
Net Wall Area	— 214 sq. ft.	x .30	x 70	=	4,494 BTU
*Infiltration	— 2760 C. F. H.	x .018	x 70	=	4,868 BTU
			Total		14,582 BTU

Simplified BTU Method

(Note rounded out Area Figures)

Gross Wall Area	— 280 sq. ft.			
Glass Area	— 65 sq. ft.	x 80	=	5,200 BTU
Net Wall Area	— 215 sq. ft.	x 20	=	4,300 BTU
Air Change	— 3600 C. F. H.	x 1½	=	5,400 BTU
		Total		14,900 BTU

*Infiltration for side with most crackage. If total infiltration were used, as is done by many contractors, the C. F. H. would be 4,280 making the infiltration loss 5,393 BTU and the total heat loss 15,107 BTU.

The figures in Table No. 1 are based on a heat loss factor of .30 BTU and a temperature difference of 70°. This applies to most of the residential buildings in the United States of either brick or frame construction. If you are located in an area where *Average* construction requires a factor other than .30 BTU or a temperature difference other than 70°, then you may revise the figures in Table No. 1 by using the procedure outlined in the following paragraphs. Should you be in a territory where the figures given in these tables may be applied and you are not interested in how we obtained the figures, then skip to the Third Step. Otherwise, read on.

The figure 80 for Glass Area is determined this way. The BTU factor for single glass is 1.13. The temperature difference is 70°. These two numbers are constant. We may, therefore, combine the two multiplying 1.13 x 70 which equals 79.1. For easy remembering and mental calculation we use 80. (For an 80° temperature difference we would multiply 1.13 x 80 = 90.4, use 90.)

The figure 20 for Net Wall Area is obtained in the same manner. The BTU factor .30 multiplied by 70 equals 21. This is adjusted for simplification and becomes 20. (For an 80° temperature difference this would be 24. For a BTU factor of .35 with a 70° temperature difference we would use 25.)

The cubic contents of the room is considered equal to the cubic feet of air per hour to be heated when there are *windows on only one side of the room.* When windows are on more than one side, the cubic contents are increased in accordance with Table No. 2. The adjusted figure is then multiplied by 1½ listed under "Air

Table No. 1

GLASS AREA	
No Storm Sash	x 80
With Storm Sash	x 40
NET WALL AREA	
Not Insulated	x 20
Insulated	x 7
Other Side Unheated	x 10
AIR CHANGE	
(See Table No. 2)	x 1½
CEILING—NO INSULATION	
No Attic Space	x 20
With Attic Space (Tight)	x 10
CEILING—INSULATED	x 7
COLD FLOOR	x 10

Change" in Table No. 1 to get the BTU. The number 1½ for air change is a simplification of the factor .018 times 70 which equals 1.26. The larger figure of 1½ allows for loose windows and doors, as well as providing an easily remembered and easily used number.

These three figures for glass, walls, and air change are basic for all rooms. Some rooms have other items which must be added to the three basic figures. For such exposures as top floor ceilings, walls with unheated rooms on the other side, cold floors, etc., the proper figures to be used will be found in Table No. 1. As this method is designed for the *average* residence, no consideration has been given to fireplaces, glass-enclosed porches, or other special construction features.

Third Step. To convert BTU to the requirements of steam, hot water or warm air heating systems, divide the BTU by 1,000 and multiply by the appropriate figure shown in Table No. 3. (To divide by 1,000 simply move the decimal point three places to the left.) Using the previous example, we have a room with a heat loss of approximately 15,000 BTU. Divided by 1,000 this becomes just 15. In the Table we specify MBH which means Thousands of BTU per Hour. To use the Table for this particular room, we proceed as follows:

Table No. 2

Windows ONE side — AIR CHANGE = Cubic Contents
Windows TWO sides — AIR CHANGE = 1½ x Cubic Contents
Windows THREE sides — AIR CHANGE = 2 x Cubic Contents

Table No. 3

RADIATOR HEATING SYSTEMS									
STEAM	MBH	x	4	plus	5%	=	Sq.	Ft.	Radiation
HOT WATER									
170° water temp.	MBH	x	7	minus	5%	=	Sq.	Ft.	Radiation
180° water temp.	MBH	x	6			=	Sq.	Ft.	Radiation
190° water temp.	MBH	x	5	plus	10%	=	Sq.	Ft.	Radiation
200° water temp.	MBH	x	5			=	Sq.	Ft.	Radiation
WARM AIR HEATING SYSTEMS									
GRAVITY									
1st Floor Room	MBH	x	9	=	Sq.	In.	Leader	Area	
2nd Floor Room	MBH	x	6	=	Sq.	In.	Leader	Area	
3rd Floor Room	MBH	x	5	=	Sq.	In.	Leader	Area	
FORCED AIR									
140° Reg. Temp.	MBH	x	14	=	Cubic	Feet	per	Minute	
135° Reg. Temp.	MBH	x	15	=	Cubic	Feet	per	Minute	
130° Reg. Temp.	MBH	x	16	=	Cubic	Feet	per	Minute	

Table No. 4

LEADER PIPE DIAMETER	8 in.	9 in.	10 in.	12 in.
Square Inches Area	50	63	78	113

Note: Return Air Ducts must equal capacity of Supply Leaders.

Table No. 5

C.F.M. Capacity of FORCED WARM AIR RISERS at .10 Static Pressure

3 in. x 8 in.	3 in. x 10 in.	3 in. x 12 in.	3¼ in. x 8 in.	3¼ in. x 10 in.	3¼ in. x 12 in.
70	85	110	80	100	130

Note: Return Air Ducts must equal capacity of Supply Ducts.

In Table No. 4 you will find the number of square inches in the various commercial sizes of Gravity Warm Air Leader pipes. Having the number of square inches required, you can easily see the size leaders to be used in the basement.

In Table No. 5 the three standard riser sizes are indicated with the maximum cubic feet per minute each will carry at a friction loss of .10 inch water gauge per 100 feet. As a 3¼" x 12" riser is the largest that can be used between studs, a room which requires more than 130 c.f.m. must have more than one riser. In many localities the standard size is 3" x 12" with a capacity of 110 c.f.m. Therefore, this Table No. 5 should be consulted to determine whether one or two risers may be needed in each room.

After you use the figures in these tables a few times, you will find that you can estimate the requirements of almost all your jobs without referring to any tables and in very little time.

For STEAM Radiation	15 x 4	= 60
	plus 5%	= 3
	Required	63 sq. ft.
For GRAVITY HOT WATER RADIATION Water Temperature 170°	15 x 7	= 105
	minus 5%	5
	Required	100 sq. ft.
For FORCED HOT WATER RADIATION Water Temperature 200°	15 x 5	= 75 sq. ft. required
For GRAVITY WARM AIR LEADERS 1st Floor Room	15 x 9	= 135 sq. in. Leader Area (two 9 in. Leaders)
For FORCED WARM AIR RISERS Average Reg. Temp. 140°	15 x 14	= 210 C.F.M. (two risers)

First Half Oil Demand Was Ten Percent Over 1946

DOMESTIC DEMAND FOR petroleum products for the first six months of 1947 was 10.12 per cent higher than the corresponding period of 1946, itself a record year, the American Petroleum Institute reported, September 4.

Half year consumption in the United States was 964,209,000 barrels of 42 gallons each for 1947 as compared to 875,584,000 barrels the previous year. Exports in the same period increased 4.32 per cent.

Refinery operations have been maintained at more than 90 per cent of rated capacity for the past twelve weeks, the Institute said. The high week was the one ending August 2, with runs to stills of 5,271,000 barrels, 93.3 per cent of the nation's refinery capacity.

Domestic production of crude oil has been at the record rate of more than 5,000,000 barrels a week for the past seventeen weeks, the Institute reported.

Photograph: *William Breed and Roland Booma.*

Results of Wage Incentives Shown by Booma-Breed of Lynn

IF THE BOYS WANT to work harder, they deserve considerably fatter pay envelopes, in the opinion of Roland Booma and William Breed, Timken oilheating partnership located at Lynn, Mass., in the industrial area north of Boston.

Pricing for profits in oilburners and fueloil is difficult these days because men's wages account for so much of total business costs. Wages must naturally bear a relationship to both living costs and to the amount of productive work done, so that the firm's customers do not have to be overcharged . . . and so that oilburners and fueloil selling prices can stay within range of average family incomes.

Booma-Breed believed that if oil truck drivers, for example, were well rewarded for extra effort they wouldn't mind exerting it. Notice that the emphasis is on effort rather than on hours . . . it's on the concept of tasks performed that an incentive plan was devised, and it has been highly effective.

For oil truck drivers a "par" was established for the various truck sizes, such as 3,600 gallons a day for a 1,950 gallon truck size; 3,400 gallons delivered for a 1,650 gallon truck; 3,100 gallons a day for a 1,300 gallon truck.

For that standard work load the drivers are paid as a base $45.00 a week. Then for all additional fueloil delivered they are paid from 2 mills up to 2.35 mills a gallon, varied for truck size and route conditions.

In the past year the men have averaged pretty consistently $12 to $14 a week extra. While this system has no relationship to hours, hourly records are kept, to be sure that the men do at least as well as if they had time-and-a-half for overtime. Without a single exception, they have always done better than if paid hourly overtime. One man has never earned less than $18 weekly bonus from the start of the plan.

The incentive operation has raised average daily gallonage per truck from 2,900 to 4,400 and it has brought wage rates per gallon delivered down to an average of .21¢ per gallon during peak months of last winter. In January the seven trucks on distillate fuels averaged three and a half loads a day, and drops averaged 198 gallons.

Booma-Breed also has an incentive arrangement for its 22 burner service men. They too have a $45.00 a week base rate as minimum, and then dollar values are tagged to the various types of work they perform, so if they have put in a hard week, their checks clearly show it.

For example, on straight service calls the men are credited $1.35 for each call plus 25¢ car expense if they drive their own. Since the start of the plan the average number of calls per man per day has risen from 5½ to 8½.

On summer clean-up jobs they get a credit of $2.75 each job and do either four or five each day, against an average of three a day under the straight time system formerly used. The service men are

The adjoining *building was recently bought to double the sales and office space.*

also given 5% on all oilburner leads that eventually bring sales. All told, they are averaging $65 to $70 a week. Like the truck drivers, their time is carefully recorded to be sure that they earn at least overtime rates, and again, there has not been an instance where they did not earn more on bonus than they would have at time-and-a-half overtime pay.

Actually, the men are not supposed to think in terms of weekly bonuses, but rather that their earnings are flexible, depending on what was accomplished.

There is, however, a bonus activity within the company that gives every employee some extra money once a year. The company's fiscal year ends with the heating season, or May 31. One-fourth of all net profits, before taxes, are earmarked for distribution to the men and women who do the work. This summer some of them got as much as $300 in the annual bonus.

Actually, what it amounts to is that Booma and Breed have made partners out of their people. This attracts a high type of workman, particularly desirable in the oilheating industry because most of the personnel is in direct touch with the firm's customers every day and can easily help or injure the business. The employees constantly are checking on each other to be sure everyone does his or her part.

Starting as a Timken dealer in 1934, the company has installed about 4,000 burners, representing 20% of all burners sold in the 20 x 25 mile area that they work. The burner service and fueloil customers are about 75% Timken.

First Half Year Exports 26,416

OILBURNER EXPORTS BY American factories in the first half of the year were 24,416, according to figures just made available by Charles "Scotty" Muirhead of the General Products Div., Office of International Trade in the Commerce Department at Washington. The table shows only 24,116 shipments but there were approximately 300 additional burners exported to American possessions such as Hawaii and the Virgin Islands.

In supplying the data, Muirhead appended a few observations of interest:

(1) The effect of decontrol June 1 does not show up in these figures to any great extent but should have a distinct bearing on third and fourth quarter exports.

(2) The six months dollar value is $1,728,645 greater than the 1946 figure of $5,541,272.

(3) The six months figure of $7,269,917 is approximately 50% of all exports for the 14 years, 1932 through 1945.

(4) The removal of these products from export control June 1 and the rising dollar value per unit should account for a higher total dollar value in the second half of the year.

(5) Although exchange is tightening up in all countries, the principal importing countries of oilburners appear to be holding these products on their essential lists and making exchange available.

(6) Weighing all the factors that might affect total 1947 volume, an estimate of somewhere between $17 million and $20 million appears reasonable. It might even exceed the 15 year total of $20,209,177.

United States Exports

Jan. 1 to June 30, 1947

DOMESTIC AND INDUSTRIAL CONVERSION OIL BURNERS AND OIL-FIRED BOILERS AND PARTS

Country	Sched. B. No. 615000 Domestic Conversion Oil Burners and Oil-Fired Boilers Unit	Value	Sched. B. No. 615100 Industrial Conversion Oil Burners and Oil-Fired Boilers Unit	Value	Sched. B. No. 615220 Parts For Burners Domestic and Industrial Value	Total by Countries Value
Iceland	45	$ 4,196	14	$ 16,672	$ 6,597	$ 27,465
Canada	14,590	1,293,357	3,762	394,573	759,514	2,447,444
Newfoundland	246	27,482	9	8,839	7,612	43,933
Mexico	786	52,221	587	135,888	16,036	204,145
Guatemala	4	797	16	6,857	1,778	9,432
Panama	1	70	30	7,920	2,518	10,508
Canal Zone	—	—	—	—	16,834	16,834
Bahamas	1	375	3	1,050	658	2,083
Cuba	69	10,808	322	51,511	18,281	80,600
Haiti	—	—	2	2,063	597	2,660
Dominican Republic	1	710	6	4,523	588	5,821
Trinidad	—	—	10	869	839	1,708
Curacao	2	294	2	1,590	8,120	10,004
Colombia	64	5,522	155	34,985	14,734	55,241
Venezuela	72	10,359	104	87,427	10,095	107,881
British Guiana	—	—	57	1,718	—	1,718
Ecuador	155	6,005	116	9,538	2,079	17,622
Peru	8	1,782	137	21,140	419	23,341
Bolivia	1	256	2	6,908	—	7,164
Chile	82	12,655	35	26,129	3,981	42,765
Brazil	274	14,182	196	49,046	20,815	84,043
Uruguay	291	28,120	212	58,542	4,019	90,681
Argentina	172	32,196	543	146,860	19,952	199,008
Sweden	5,299	721,038	2,714	554,686	1,141,744	2,417,468
Norway	254	45,484	450	161,652	16,564	223,700
Denmark	—	—	—	—	1,067	1,067
United Kingdom	27	1,091	2	82	14,972	16,145
Netherlands	327	51,298	325	86,328	26,258	163,844
Belgium	1,413	130,238	115	43,956	33,560	207,754
France	13	16,148	82	36,777	27,246	80,171
Switzerland	937	91,196	419	84,802	73,897	249,895
U.S.S. Russia	1	128	12	7,684	7,828	15,640
Portugal	73	11,403	91	13,353	374	25,130
Yugoslavia	—	—	1	4,020	—	4,020
Greece	52	22,235	20	11,251	556	34,042
Turkey	59	38,295	4	11,615	—	49,910
Syria	15	4,970	23	3,826	—	8,796
Iran	60	2,212	7	1,927	439	4,578
Palestine	15	2,263	86	5,708	2,992	10,963
S. Arabia	—	—	6	1,412	17,983	19,395
Afghanstan	93	4,391	—	—	60	4,451
India	113	181	1	1,109	1,688	2,978
Netherland Indies	—	—	—	—	2,174	2,174
Philippine Republic	23	1,514	77	21,391	1,379	24,284
China	148	21,057	264	77,992	6,254	105,303
Hong Kong	1	180	20	12,888	5,570	18,638
Australia	2	312	—	—	1,810	2,122
New Zealand	52	6,827	—	—	430	7,257
Algeria	37	8,207	29	11,228	—	19,435
Egypt	107	15,948	61	9,934	2,337	28,219
Union of South Africa	116	14,967	10	548	1,299	16,814
All others	15	1,167	39	9,997	2,419	12,583
Total	26,116	$2,714,137	11,178	$2,248,814	$2,306,966	$7,269,917

Source: Bureau of the Census, Department of Commerce.
Prepared in: The General Products Division, Commodities Service, Office of International Trade, U. S. Department of Commerce.

Additional Fueloil Rations

DOMESTIC fueloil rations issued during the last war year were shown by OPA districts and regions in the February issue, followed by a county break-down for New England in the April issue, and for the Middle Atlantic states in May. We have now completed a county analysis of domestic rations in the other fueloil rationed areas, and present here the last installment of the figures on residential central heating and space heating.

The table shows county figures; for individual board data, write the magazine.

Only the domestic heating rations are shown in the table, those identified by Form R-1100, separated into central heating and space heating. As was explained in detail in the February issue, a lot of burners have been installed in these areas since the ration date.

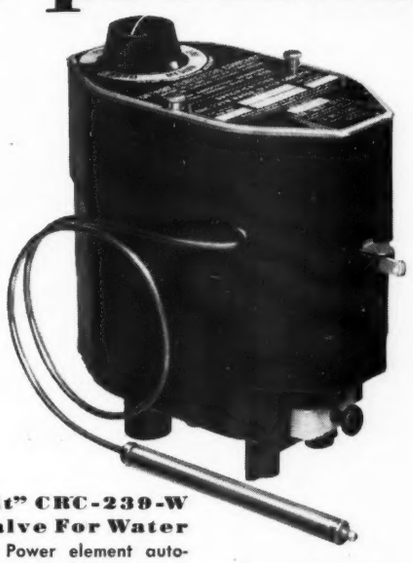
The actual number of distillate oilburners operating in any county is somewhat above these figures, because often a typical domestic type burner is installed in a small store or perhaps a four-family flat, and it will be recalled that rations for such buildings were issued under R-1101, rather than the private dwelling ration.

SOUTHEASTERN STATES

	R-1100 Central		R-1100 Space	
	Number Issued	*Average Gallons*	*Number Issued*	*Average Gallons*
GEORGIA				
Savannah District (Continued)				
Tattnall	3	966.7	88	225.6
Telfair	4	426.0	89	220.0
Thomas	67	1098.0	756	221.1
Tift	7	1557.1	318	245.9
Toombs	7	764.3	105	248.8
Treutlen	3	815.3	20	159.7
Turner	1	850.0	35	177.7
Ware	43	630.7	680	181.1
Warren	4	795.0	45	195.8
Wayne	..	..	168	174.5
Wheeler	1	833.0	9	236.1
Worth	2	1050.0	78	189.5
GEORGIA TOTAL	2,517	731.0	32,536	209.4
NORTH CAROLINA				
Charlotte District				
Alleghany	4	1025.0	23	240.7
Alexander	2	1275.0	62	301.4
Anson	37	1155.4	233	223.3
Ashe	1	2000.0	10	278.0
Avery	1	1350.0	22	99.5
Buncombe	124	1402.9	997	161.6
Burke	27	1608.6	320	166.6
Cabarrus	134	1253.5	1,460	276.8
Caldwell	51	975.7	473	209.0
Catawba	71	893.7	841	236.6
Cherokee	..	..	97	201.8
Clay	..	..	6	133.0
Cleveland	63	1192.7	668	253.8
Davidson	109	1009.4	821	264.5
Davie	11	1572.7	91	211.8
Forsyth	789	1043.7	2,336	209.3
Gaston	199	1024.2	1,168	279.8
Graham	..	..	394	246.4
Guilford	1,659	866.0	3,618	235.2
Haywood	15	836.0	196	247.9
Henderson	40	684.2	248	465.2
Iredell	125	844.0	624	305.8
Jackson	3	907.7	75	187.2
Lincoln	23	1231.3	216	153.0
Macon	..	..	31	223.5
Madison	4	1100.0	17	332.1
McDowell	11	1536.4	108	139.8
Mecklenburg	1,225	1080.3	4,510	259.5
Mitchell	3	1060.0	18	375.6
Montgomery	27	1016.6	141	401.0
Polk	55	1093.0	95	204.5
Randolph	86	1212.2	677	263.6
Richmond	95	1166.6	889	212.2
Rockingham	137	1118.9	1,040	210.2
Rowan	230	1130.1	1,293	261.5
Rutherford	26	1116.5	319	197.1
Stanly	89	1053.9	614	285.6
Stokes	4	1325.0	15	417.0
Surry	88	1093.3	436	191.2
Swain	..	..	19	263.9
Transylvania	23	374.2	192	174.8
Union	21	932.9	477	251.8
Watauga	18	919.8	9	449.8
Wilkes	44	1236.1	164	297.4
Yadkin	13	1539.2	53	422.7
Yancey	..	..	5	99.0
Raleigh District				
Alamance	269	1058.6	2,074	282.2
Beaufort	62	1085.8	649	271.6
Bertie	27	1258.9	272	295.0
Bladen	22	1159.3	179	237.4
Brunswick	4	1075.0	262	188.8
Camden	4	1162.5	103	267.7
Carteret	65	734.2	763	280.5
Caswell	4	1147.5	95	301.5
Chatham	56	650.1	187	179.3
Chowan	28	1360.0	267	308.8
Columbus	46	939.7	469	234.9
Craven	105	536.6	1,228	291.3
Cumberland	679	774.0	2,436	283.7
Currituck	..	..	97	162.4
Dare	14	596.4	425	249.3
Duplin	18	714.9	395	346.7
Durham	844	1004.2	3,659	309.0
Edgecombe	60	1277.7	439	240.2
Franklin	40	1054.8	297	251.4
Gates	9	1047.8	83	291.1
Granville	50	1384.0	260	306.9
Greene	15	1300.0	216	317.6
Halifax	110	1017.6	1,147	265.8
Harnett	113	1137.1	561	300.0
Hertford	51	1233.1	265	398.6
Hoke	10	1055.0	174	286.3
Hyde	..	..	56	208.9
Johnston	95	893.2	587	313.9
Jones	1	800.0	114	258.4
Lee	66	1150.0	446	205.4
Lenoir	168	1272.1	1,391	290.6
Martin	45	556.4	326	338.2
Moore	349	1224.6	441	237.3
Nash	40	1068.5	374	322.1
New Hanover	637	942.8	5,434	246.8
Northhampton	33	1167.0	229	282.9
Onslow	10	1130.0	2,986	192.9
Orange	320	754.3	192	247.8
Pamlico	2	1124.0	116	338.9
Pasquotank	87	1277.2	1,085	300.9
Pender	6	991.7	199	222.0
Perquimans	13	1346.2	201	240.9
Person	47	1190.2	355	330.6
Pitt	202	1261.6	1,644	317.6
Robeson	182	878.1	1,044	320.7
Rocky Mount	215	1126.1	1,157	249.9
Sampson	34	1654.1	454	331.7
Scotland	34	1040.4	360	285.4
Tyrrell	3	1510.0	77	306.2
Vance	98	1023.2	493	316.4
Wake	1,314	1009.7	2,418	262.4
Warren	25	1396.0	193	287.9
Washington	14	1332.1	310	243.4
Wayne	175	1163.1	1,336	333.2
Wilson	87	1368.8	1,114	299.2
NORTH CAROLINA TOTAL	12,694	1014.8	68,237	263.6

(*Continued on page 188*)

Comfort is profitable— Sell "DETROIT" Float Valve equipped water and house heating units—



"Detroit" CRC-239-W Float Valve For Water Heaters. Power element automatically regulates oil flow to burner to keep water hot. Easily operated adjustment enables user to regulate water temperature. "Fails safe" in case of damaged element. No electrical wiring needed.

"Detroit" CRC-239 Manual Float Valve For Space Heaters. Has a wide reputation for providing dependable control on all types of space heater applications.

The modern child, bathed daily, knows nothing of the discomforts of the old time Saturday bath in the washtub by the kitchen stove. It was never warm enough—there was never enough warm water.

Modern parents insist on a warm bathroom and plenty of hot water for their children and themselves.

Modern comfort standards demand modern heating devices—devices that are clean, reliable and provide steady, even heat. It's profitable to sell this kind of comfort. People want it and will buy it.

"Detroit" Float Valve equipped space heaters, water heaters, furnaces, and ranges provide this profitable comfort. "Detroit" Float Valves are well known for their reliability. Temperature compensated, they maintain constant oil flow at any given setting, regardless of oil temperature. They're simple, durable, easy to clean and service. 2828

"DETROIT" Float Valves — Guardians of The Home Fires

DETROIT LUBRICATOR COMPANY

"DETROIT"

General Offices: 5800 TRUMBULL AVENUE, DETROIT 8, MICHIGAN

Division of American Radiator & Standard Sanitary corporation

Canadian Representatives — RAILWAY AND ENGINEERING SPECIALTIES LIMITED, MONTREAL, TORONTO, WINNIPEG

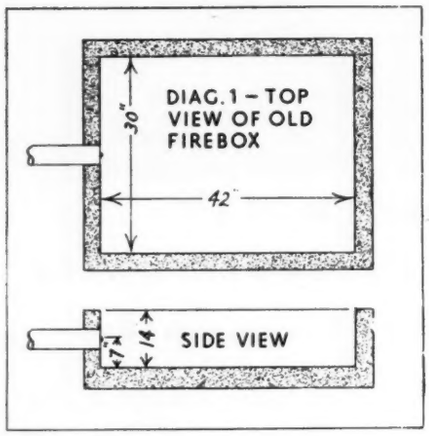
"Detroit" Heating and Refrigeration Controls • Engine Safety Controls • Float Valves and Oil Burner Accessories • "Detroit" Expansion Valves and Refrigeration Accessories • Stationary and Locomotive Lubricators

Servicing A Firebox

fueloil & oil heat
Short Short Article
on Burner Service

YOU CAN'T SERVICE an oilburner properly without servicing the flame, declares the installation and service manager employed by a fueloil distributor of Brooklyn, N. Y., and therefore proper servicing includes all the things needed to produce a clean and efficient flame. Often firebox changes are part of service work, he goes on, and he cites the following example.

Perennially discontented with the burner installed during the war to replace an old, worn-out burner, the owner of a 20-family apartment house telephoned for service often. To keep the fueloil account, the oil company charged for only a few of the service calls. After all, the service men said, on each call they merely looked at the burner, touched an adjustment or two, and left the job little improved. But giving the uncharged-for service was a constant drain, costly to the service department. It seemed foolish just to look at a defective burner a few dozen times a year. It might be wiser to diagnose the trouble and take up with the owner the matter of making the job right once and for all.



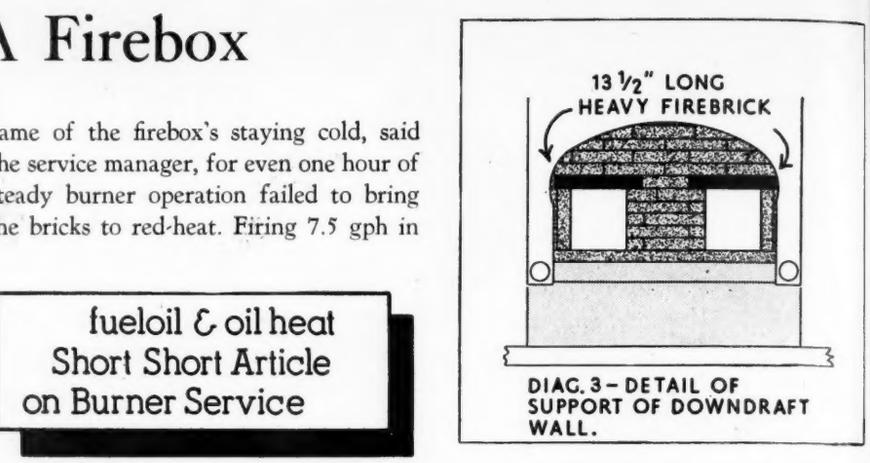
DIAG. 1 – TOP VIEW OF OLD FIREBOX

After spending an afternoon on the installation, the service manager himself decided that the owner had plenty to complain about. He'd have to be crazy to be satisfied with the burner. The loud cries about excessive fuel bills were justified, for the CO_2 was 6¼% and the stack temperature 835°. The flues had a layer of soot one-inch thick; smoke came from the chimney. Flame pulsation rattled windows causing tenant complaints.

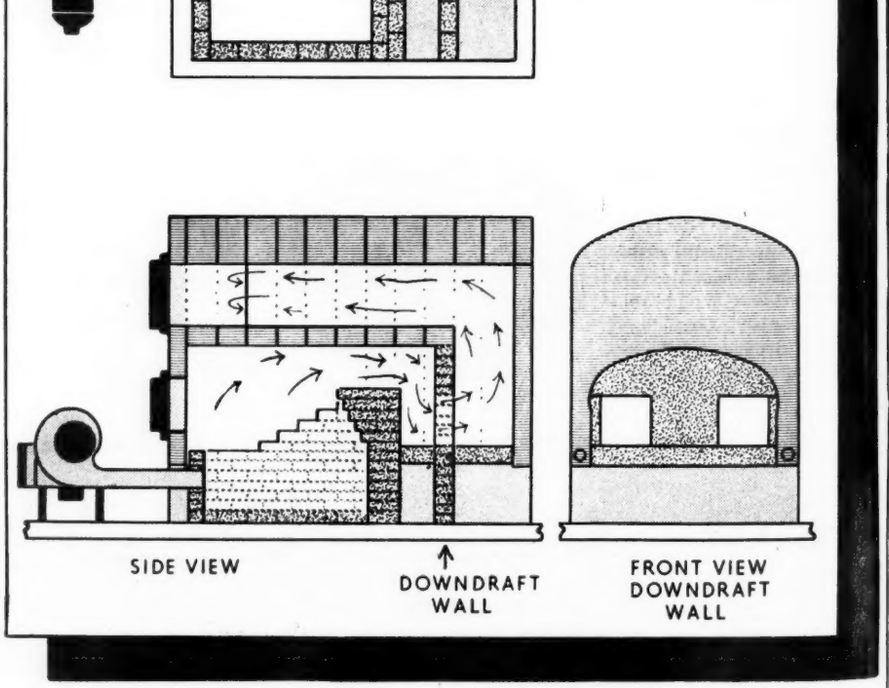
A 10 gph nozzle fired a shallow firebox, as large as could be built in the boiler, 30" wide and 42" long. All the complaints came of the firebox's staying cold, said the service manager, for even one hour of steady burner operation failed to bring the bricks to red-heat. Firing 7.5 gph in an extremely efficient firebox, he reasoned, would generate more steam than 10 gph in the inefficient box. He planned a new firebox with a floor area 26" x 26" and with a special downdraft wall to give high-temperature combustion even with the boiler somewhat under-fired. The side and back walls would be very high, and the back wall would be corbelled or stepped-in over the flame. This design together with light-weight firebrick would give far better combustion.

The price of the firebox (together with boiler cleaning, a burner tune-up, one year's service, and combustion tests) came to $250. The owner ordered the work done because he received verbal assurance that it should cut the oil bills at least 20% and save the cost of cleaning the boiler several times a year. Each cleaning costs $20.

Tests of the new firebox showed 11¾% CO_2 and 460° stack temperature, with the boiler clean and fired 7.5 gph. The flues now stay relatively clean; flue-cleaning may be needed only once every three or four years. The flame is practically silent and without pulsation with fuel savings from 30% to 35%.



DIAG. 3 – DETAIL OF SUPPORT OF DOWNDRAFT WALL.



DIAG. 2 NEW FIREBOX

So many people want to buy Air-Seel burners our plants are working night and day to meet the demand. Why this great demand? First, because Air-Seel's exclusive features make it the ideal oil burner to meet the conversion and replacement markets in Air-Seel's patented heat saving features with resulting economy of operation are mighty sales magnets in these days of high living costs. Another big reason for Air-Seel's unprecedented demand is because we tell people about Air-Seel's features. In October alone 23 million people will read the Air-Seel story in magazine advertisements like this or will hear it over the radio on the popular Silent Glow Glee Club programs directed by Emile Cote.

All this proves one point that's important to you.

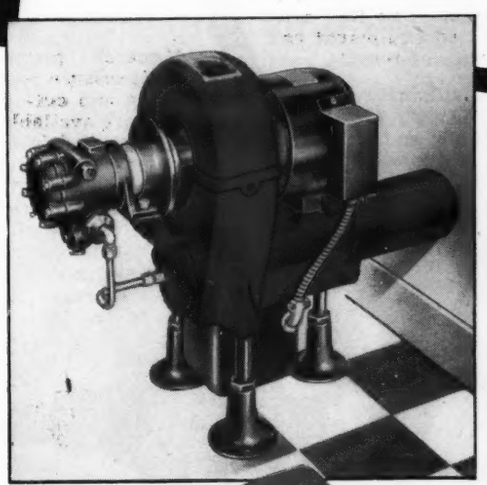
WHEN YOU FEATURE AIR-SEEL YOU CAN COUNT ON SALES

all oil burners make heat B-U-T

SILENT GLOW *Air Seel*

CONSERVES THE HEAT IT MAKES

The important Air-Seel heat-saving feature will be easily and quickly demonstrated by your Silent Glow dealer. If you plan to modernize your heating system or replace your present oil burner, let him show you how Air-Seel conserves the heat you pay for... why "those who know choose Silent Glow".



For nearly a quarter of a century Silent Glow products have brought warmth and comfort to homes the world over. Every Silent Glow Air-Seel is backed by these years of experience... provides years of healthful heating for you and your family.

REPLACEMENT OR REFUND OF MONEY
Guaranteed by Good Housekeeping
IF NOT AS ADVERTISED THEREIN

Those Who Know Choose
SILENT GLOW
OIL BURNERS

The Silent Glow Oil Burner Corp. FOH-2
1477 Park St., Hartford 6, Conn.

Please send, without obligation, the complete facts about Air-Seel and name of nearest dealer.

NAME_____

STREET_____

CITY_____ ZONE____ STATE_____

fuel oil & oil heat

August New Home Starts Largest Since War End

CONSTRUCTION WAS STARTED during August on 25,166 new dwelling units financed and built under the program of the Federal Housing Administration. This is a greater number than in any postwar month, and second largest in the history of FHA, Commissioner Franklin D. Richards announced recently. The record volume was 26,100 units started in July 1941.

The August total was more than four times the 5,777 units started in the same month last year under the FHA program, and nearly three times the 1946 peak of 8,696 started last October.

"This is the eighth successive month of increases in starts of residential construction under FHA-insured financing since President Truman started his intensified drive for veterans' housing last winter," Mr. Richards said. "It is an indication of the speed with which the program has been accelerating in spite of difficulties such as building costs and labor and material scarcities."

MONARCH
BURNER ACCESSORIES

AIR CONES AND STABILIZERS

F-57 H-215

Atomizing Nozzles

Preferred Because:

1. Each nozzle is individually tested and checked for capacity against the flow of a calibrated master sample. Capacity tolerances are as low as plus or minus 2½%.

2. Standard nozzles will fire most gun type high pressure burners satisfactorily, but special series are also available for burners requiring specified spray characteristics.

New air cone-stabilizer combinations are now available for 3⅞" and 4½" I.D. air tubes.

Monarch combinations have been used as original equipment by burner manufacturers for many years and dealers have used thousands of them to make old burners more efficient. Eliminate guesswork—Use this tried and tested equipment and be sure of *results.*

Equipment for 3½", 3⅞", 4", 4¼", 4¾", 6" and 8" I.D. air tubes in stock.

Replacement Valves

Monarch piston type pressure regulating and cut-off valves are available in several models to suit most replacement needs. G-49 valves can be mounted in any position and piston will not jam from dirt. Contain no bellows or diaphragm to break or corrode.

Write for Catalog D

MONARCH MFG. WORKS, INC.
2503 E. ONTARIO ST.
PHILADELPHIA 34 PENNA.

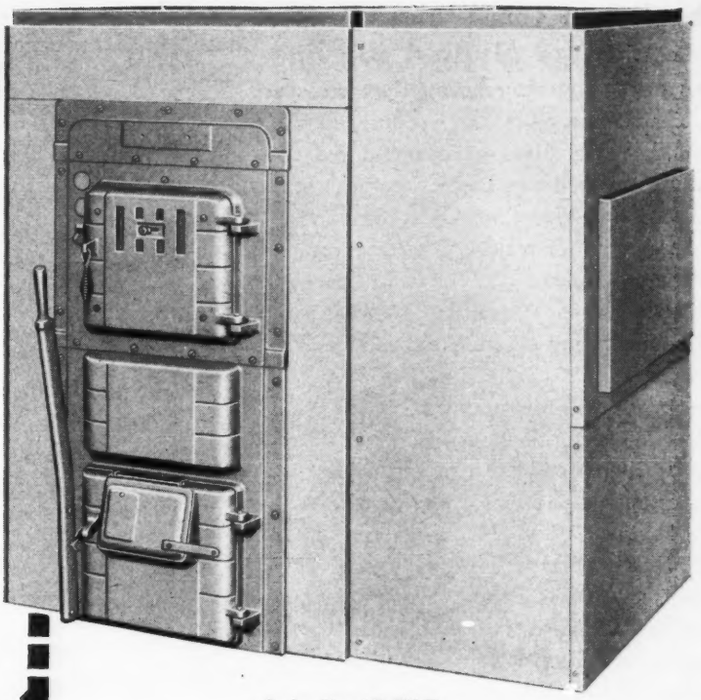
European Distributor: A. Coutau, Ruedela Scie No. 16, Geneva, Switzerland

Residual Heating Oilburners In Use January 1, 1947

THERE HAVE BEEN a number of inquiries for a table showing estimated installation of residual oilburners (those burning No. 5 or No. 6 fueloil) broken down by states and general regions. Apparently, there are about 142,000 such burners in heating applications. These do not include utilities or marine installations. The table follows:

New England States	
Massachusetts	15,296
Connecticut	5,755
Rhode Island	2,311
N. Hampshire	914
Maine	651
Vermont	268
	25,190
Middle Atlantic States	
New York	21,465
New Jersey	8,570
Pennsylvania	7,791
Maryland	1,842
Dist. of Col.	1,508
Delaware	178
	41,354
Middle Western States	
Illinois	20,131
Minnesota	1,687
Michigan	7,478
Missouri	6,707
Wisconsin	2,230
Iowa	636
Indiana	2,400
Nebraska	624
Ohio	785
S. Dakota	42
Kansas	988
N. Dakota	..
	43,708
Western States	
California	15,019
Washington	6,420
Oregon	5,762
Nevada	233
Arizona	57
Colorado	..
Idaho	7
Utah	7
Montana	164
Wyoming	15
New Mexico	..
	27,684
Southern States	
Virginia	767
Florida	1,517
N. Carolina	83
Louisiana	213
Georgia	197
Texas	337
S. Carolina	28
Kentucky	550
Arkansas	231
Oklahoma	5
Alabama	55
Tennessee	393
W. Virginia	..
Mississippi	..
	4,376
Total United States	142,312

Luxaire adds another PROFIT MAKER for YOU



Series No. AC 700-F

DESIGNED FOR COAL EASILY CONVERTED FOR Oil, Gas or Stoker

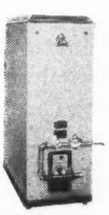
The completeness of the Luxaire line is further enhanced by a new, steel air conditioning unit with which you can meet profitably any fuel restriction or regulation.

The unique design and construction of the compact enameled steel cabinet permit assembly of the full height blower compartment to either the left or right side.

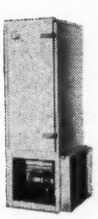
Advanced engineering and construction of the gas tight steel heating element with die formed radiator and automatic, submerged arc welding of seams, the large area of heating surface and the long fire travel, make the Luxaire shown above the kind of unit that is satisfactorily converted to oil, gas or stoker firing.

The large, silently operating blower with rubber cushioned motor . . . large area, long lived filters, and automatic humidifier assure an abundance of clean, humidified circulating air.

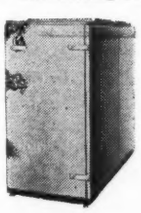
Series A
Gas-Fired, Steel
Air Conditioning Unit



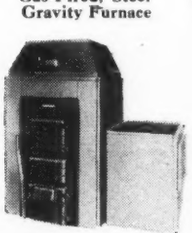
Series G
Gas-Fired, Steel
Gravity Furnace



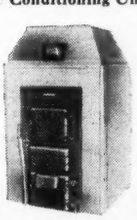
Series H
Gas-Fired, Utility Steel
Air Conditioning Unit



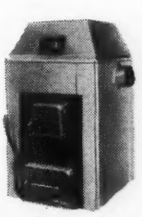
Series O
Oil-Fired, Steel
Air Conditioning Unit



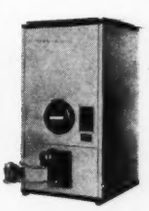
Series AC-700
Coal-Fired, Steel
Air Conditioning Unit



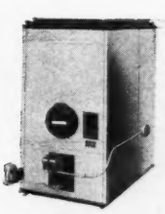
Series 700
Coal-Fired, Steel
Gravity Furnace



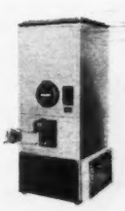
Series C
Coal-Fired, Cast
Gravity Furnace



Series VG
Oil Fired, Steel
Gravity Furnace



Series VA
Oil Fired, Steel
Air Conditioning Unit



Series VH
Oil Fired, Steel Utility
Air Conditioning Unit

THE C·A·OLSEN MANUFACTURING COMPANY

Luxaire HEATING & AIR CONDITIONING UNITS

ELYRIA 12, OHIO

fuel oil heat

Shell And Texas Jointly Build New Midwest Pipeline

AS A STEP TOWARD relieving the increased demands for petroleum products in the middle west, plans were announced recently by Shell Pipe Line Corporation and The Texas Pipe Line Company for the construction of a new 500-mile common carrier petroleum pipeline from Cushing, Oklahoma, to Wood River and Salem, Illinois, having an estimated carrying capacity of 150,000 barrels per day. The new line will be constructed of 20" pipe from Cushing to Wood River and 16" pipe from Wood River to Salem. The cost is estimated to be in excess of $22,000,000. The 20" segment will be jointly owned by Shell Pipe Line Corporation and The Texas Pipe Line Company in undivided interests of 52% and 48% respectively. The 16" segment will be 100% owned by The Texas Pipe Line Company.

The new line will provide transportation beyond Cushing for part of the throughput from the recently announced 20-22-24" pipeline now under construction from West Texas-New Mexico to Cushing as a joint ownership project in which The Texas Pipe Line Company and Shell Pipe Line Corporation are participants.

Shell also is modernizing and reconstructing its Mid-West pipe lines in a $1,000,000 program which will increase capacity by 336,000 gallons daily of gasoline, fueloil and other products, D. B. Hodges, vice president, announced recently. Two eight inch lines, both of which carry finished products from Shell's refinery at Wood River, Ill., are to be modernized. One line runs to East Chicago, Ind.; the other to Lima, Ohio, with extension to Springfield and Columbus, Ohio. Existing pumping equipment is slated to be rebuilt or replaced during the program.

◈

Only One Fueloil Bid For Rochester Buildings

TAKSEN SERVICE STATIONS, Rochester, N. Y., was the only bidder on a city contract for between 150,000 and 200,000 gallons of fueloil for heating city buildings, offering a price of 13½ cents a gallon, Fred W. Ereth, city agent, reported.

Fuel Savings Bulletin Issued by Mines Bureau

ANSWERING HUNDREDS OF PRACTICAL questions on fuel saving practices and fuel conservation measures, the Bureau of Mines has combined in a single publication all of the material used successfully in the wartime National Fuel Efficiency Program that resulted in the saving of millions of tons of coal annually and in proportionate savings in other fuels, James Boyd, Director of the Bureau, announced Sept. 19.

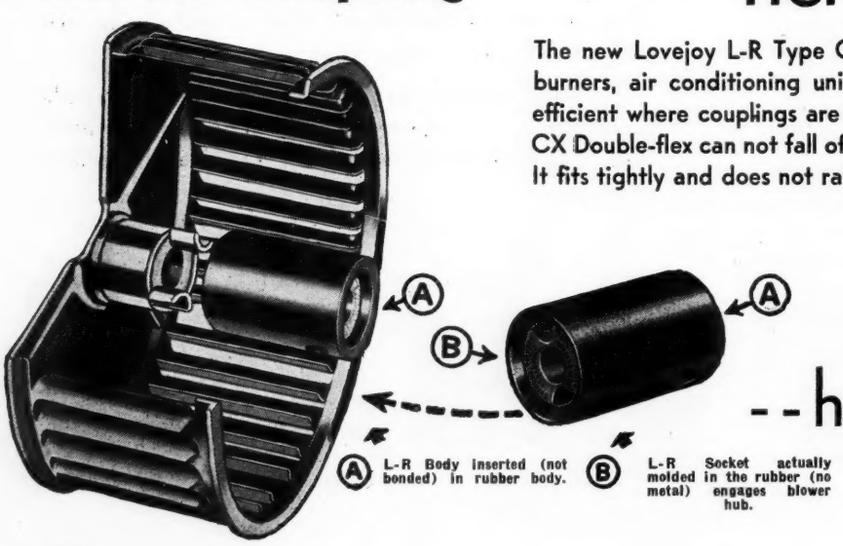
The most effective material distributed during the 2-year campaign proved to be an extensive series of question-and-answer "quiz" sheets covering nearly every phase of fuel saving. All of these question-and-answer "quiz" sheets are included in the present Bureau publication issued as Bulletin 466.

Copies of Bulletin 466, "A Guide for Reducing Fuel Consumption in Commercial Plants," may be obtained only from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., for 50 cents.

LOVEJOY L-R
Type CX Double-flex
Flexible Coupling

— — here's what it is:

The new Lovejoy L-R Type CX Double-flex is a better coupling for oil burners, air conditioning units and other installations; but particularly efficient where couplings are located in the dark or close quarters. The CX Double-flex can not fall off when blower and pump units are serviced. It fits tightly and does not rattle.



--here's what it does:

Positive correction of misalignment, shock, surge, backlash, etc. is achieved with the Lovejoy L-R Type CX Double-flex flexible coupling. Oil heating and air conditioning engineers and servicemen say it is quickly assembled and easily installed.

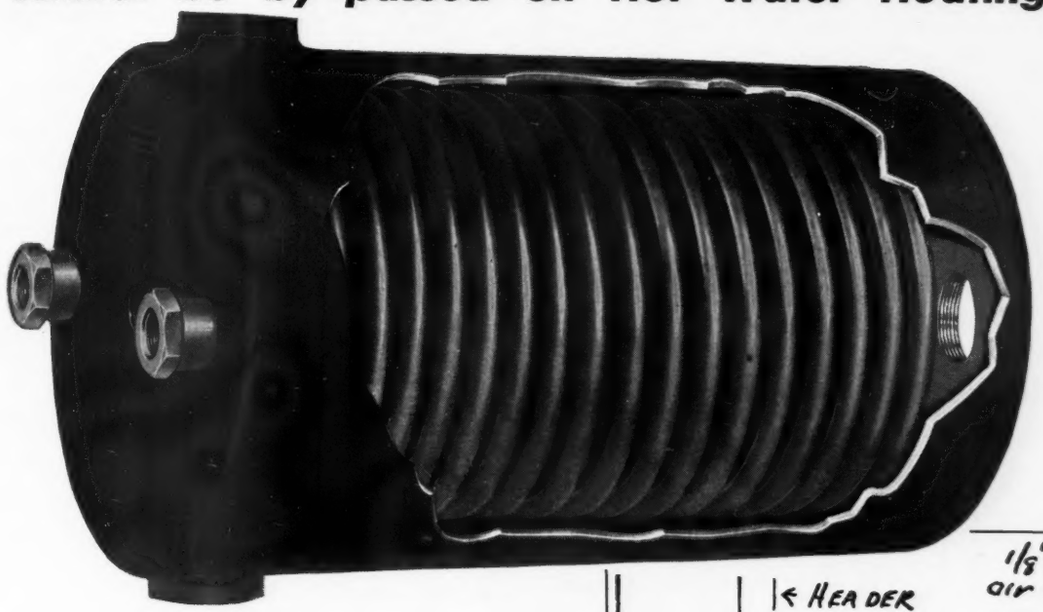
Get all the details in Bulletin 520

OHI

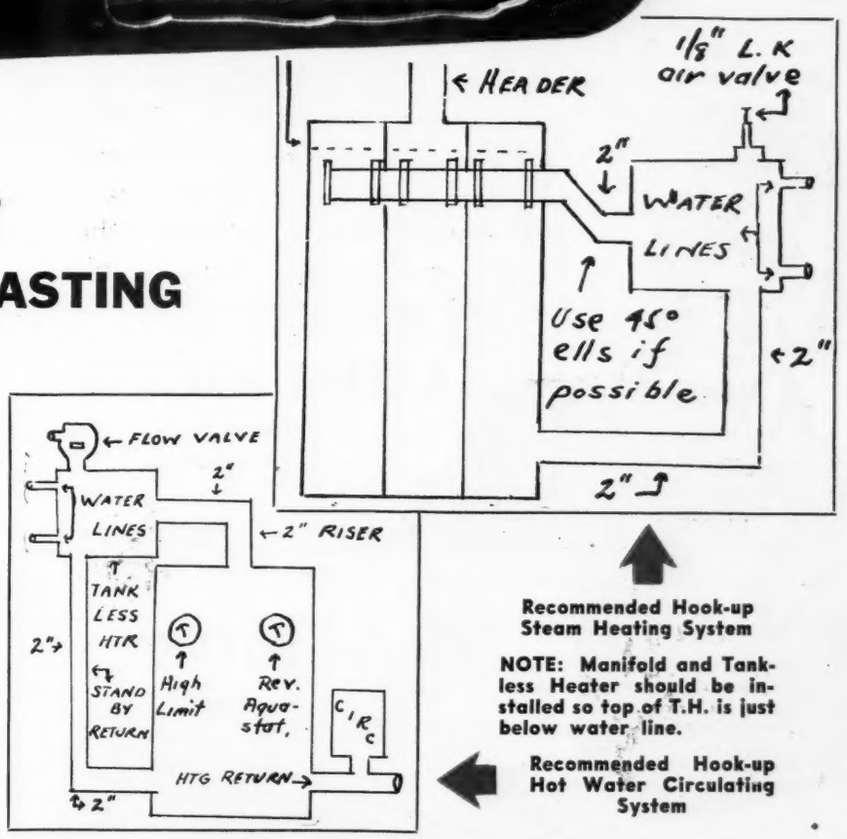
LOVEJOY FLEXIBLE COUPLING CO.
5012 W. Lake Street • Chicago 44, Ill.

Fire Proven Tankless Heaters

. . . cannot be by-passed on Hot Water Heating Jobs



- **ECONOMICAL**
- **CONVENIENT**
- **LONGER LASTING**



Recommended Hook-up Steam Heating System

NOTE: Manifold and Tankless Heater should be installed so top of T.H. is just below water line.

Recommended Hook-up Hot Water Circulating System

FIRE PROVEN TANKLESS HEATERS have been proven over a period of years. They are made in three sizes—to take care of the one family house or the small apartment building. They may also be manifolded to give any amount of water desired.

Fire Proven Tankless Heaters are highly efficient when installed as recommended, thus economical in operation.

Longer Lasting than other domestic water containers and heaters, because the domestic water circulates through copper only.

SPECIFICATIONS:

Welded Steel Shell with welded-in head to which coils are attached with bronze connectors.

Heating surface designed for minimum pressure drop and high transfer efficiency. The domestic water side is made entirely of bronze and copper, so that domestic water cannot come in contact with iron.

An aquastat tapping is provided.

NO. OF HEATER	501	502	503
Capacity—gal. per min. 180° F. aquastat setting	3¾	5	8
Recommended for number of families	1	1-3	4-6
Boiler Tapping	2"	2"	2"
Coil Tapping	¾"	¾"	¾"
Length—overall	14½"	20"	24"
Width—overall	13¼"	13¼"	13¼"
Dealer Price	COMPETITIVE		

- ***Call your Jobber—or contact us direct, giving name of your jobber. Shipments are prompt.***

FIRE PROVEN PRODUCTS • 9 E. Lafayette Avenue • Baltimore 2, Md.

New 1947 Oilburner Installation Data

FROM THE AMOUNT of interest shown in burner shipment and installation figures this year it is apparent that the equipment phase of the oilheating industry, in a shifting type of market, is eager for every guide. Likewise, fueloil men want all the help they can get to estimate the load in the coming season.

An unusual number of companies have questioned the reasons for the fact that FUELOIL & OIL HEAT'S monthly estimates of installations seemed at considerable variance to the Census Bureau's shipment figures, as those subsequently became available. In other words the magazine, in quoting estimates two or three months in advance of the official figures, seemed to be running on the low side.

With Census Bureau data for the first six months of 1947 now complete, a special study has been made in cooperation with the Government men who work on these data to evaluate the influences that weight these figures one way or the other. It has been known that they included exports, but not generally known that in the conversion burner figures on the Bureau's reports are included quite a lot of pot-type burners that are shipped to manufacturers of water heaters, so do not heat homes.

The tabulation that follows makes relatively clear why the Census figures for the half year are considerably larger than burners actually installed.

Census Bureau data, factory shipments of domestic conversion burners and units	506,176
Estimated shipments by companies not reporting to the Bureau	26,640
Estimated total shipments	532,816
Deduct vaporizing conversion burners sold to water heater manufacturers (Est.)	44,953
Actual central heating conversion oilburners and units shipped	487,863
These were exported	26,416
Total shipped for domestic applications	461,447
Burners in transit—shipped from factories but not received by dealers—difference between June 30 and January 1	10,984
Burners received by dealers in the period	450,463
Dealer stock increase in the period—Dealer stocks June 30, 1947 113,846; Dec. 31, 1946 19,266	94,580
Burners actually installed	355,883
7.3% replaced old oilburners	25,979
New fueloil users	329,904

SURE!

Year in, year out, thru war, depression and prosperity, REX-OIL standards of excellence have been the highest. For 25 years the name REXOIL has meant the finest merchandise, a friendly policy and helpful cooperation.

A REXOIL FRANCHISE
is waiting for Good Distributors

You're RIGHT With Rexoil

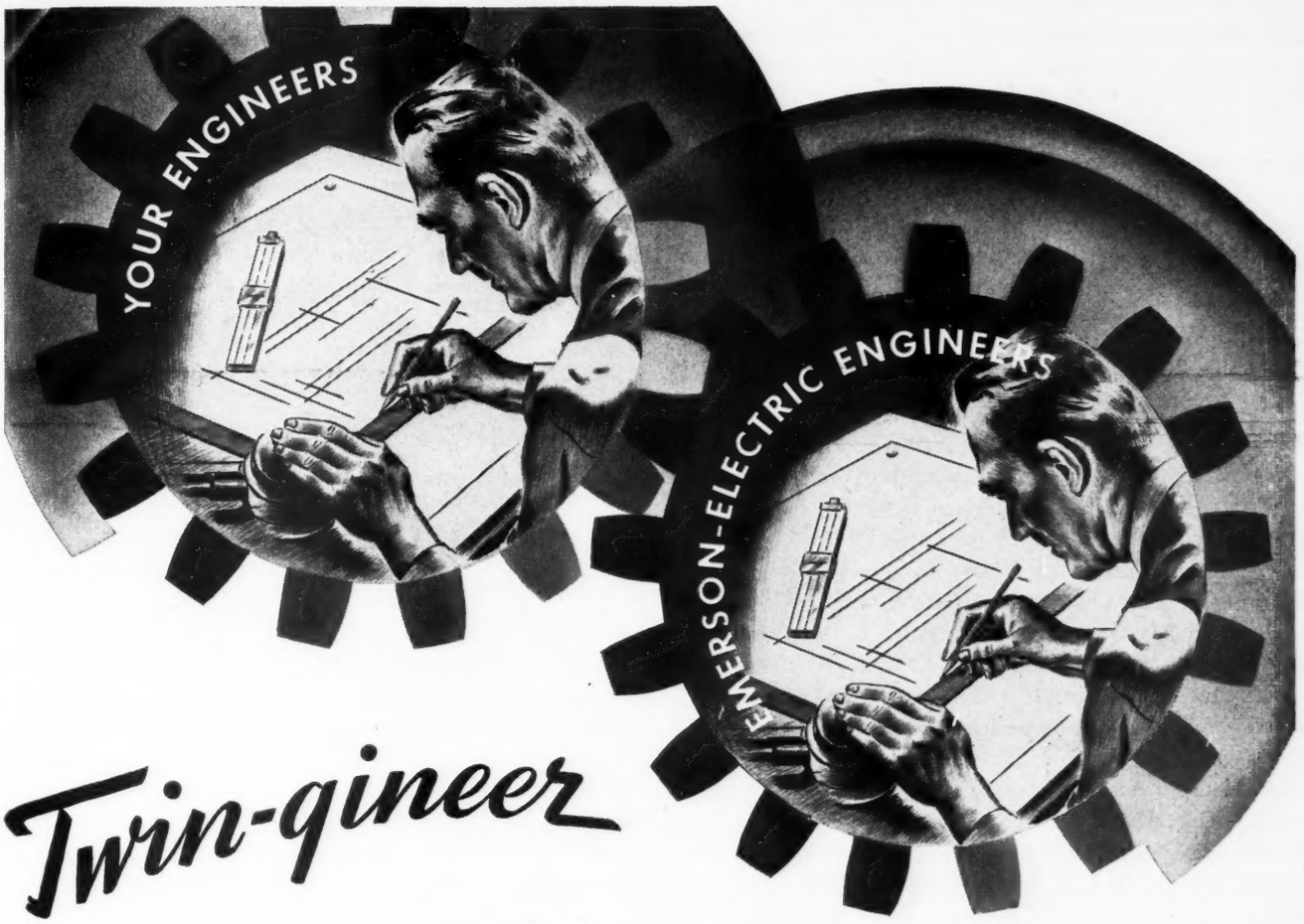
REIF-REXOIL, Inc.,
37-43 Carroll Street
Buffalo 3, N. Y.

Pioneers in the Oil Burner Manufacturing Business

L. I. Institute Needs Instructors For Courses

THREE COURSES are offered by Long Island Agricultural & Technical Institute, Farmingdale, L. I., N. Y., in the automatic heating and airconditioning field. A bulletin issued recently by the Institute reveals that there are openings on the instructional staffs for each course. The positions are permanent after completion of the first year and are on unclassified New York State Civil Service with retirement and one month's annual paid vacation. Positions are filled by appointment, without formal examinations.

A course in automatic heating and control devices includes laboratory and shop instruction in operation, construction and installation of all types of automatic heating units. Refrigeration and airconditioning, with laboratory and shop instruction on domestic and commercial refrigeration and airconditioning units, is covered in a second course, and classroom instruction in the layout and design of air



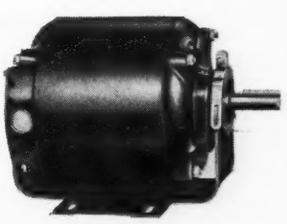
Twin-gineer

Your New Product for MARKET SUCCESS

To achieve top performance and top sales for your new or improved motor-driven appliance, mesh your own experience in design with the 57 years of engineering experience behind Emerson-Electric.

Such *meshing*—"Twin-gineering" we call it—may also help you save costly engineering back-tracking, may suggest many manufacturing short cuts.

Emerson-Electric engineers are now at your service, ready and able to gear their engineering ideas, experience and skill to your own in designing and producing market stand-outs in the motor-driven appliance field.



Emerson-Electric Motors
1/20 to 5 H. P.—AC and DC

To add this vital cog to your own business machine, get in touch with Emerson-Electric TODAY!

THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

Branches: New York • Chicago • Cincinnati
Detroit • Los Angeles • Davenport

EMERSON ELECTRIC

MOTORS · FANS — APPLIANCES

fueloil & oil heat

ducts, refrigeration, thermodynamics and theory constitutes a general course in refrigeration, airconditioning and heating.

Complete details can be obtained from the Institute's director, Technical Division, David W. Allee or S. R. Mears, head, Mechanical Department.

◈

Home Buyers' Incomes Averaged $3,619 in 1946

OVER HALF THE families who built or bought homes last year under the permanent program of the Federal Housing Administration had annual incomes of less than $3,500, it is reported by an article on "Family Incomes of Small-Home Buyers" in the Second Quarter 1947 issue of the *Insured Mortgage Portfolio*, official FHA publication.

The analysis is confined to families financing single-family owner-occupied homes under Section 203, Title II, National Housing Act. It shows that 54.4% of the families financing new homes under Section 203 and 58.0% of those financing existing homes had incomes of less than $3,500.

The average income of families financing new homes under Section 203 last year was $3,619.

Influence of the rising national income, the article states, is clearly shown by comparing the percentages of incomes amounting to less than $3,500 for the past several years. The number of new-home purchasers under Section 203 with incomes of less than $3,500 was 84.1% in 1940, 83.6% in 1942, and 54.4% in 1946. The number of existing-home purchasers with incomes of less than $3,500 was 76.2% in 1940, 71.9% in 1942, and 58.0% in 1946.

◈

AGA Program To Upgrade Equipment and Installations

A SUGGESTED PROGRAM for the upgrading of gas heating equipment and installations has been issued by the House Heating and Air Conditioning Committee, Residential Gas Section, American Gas Association.

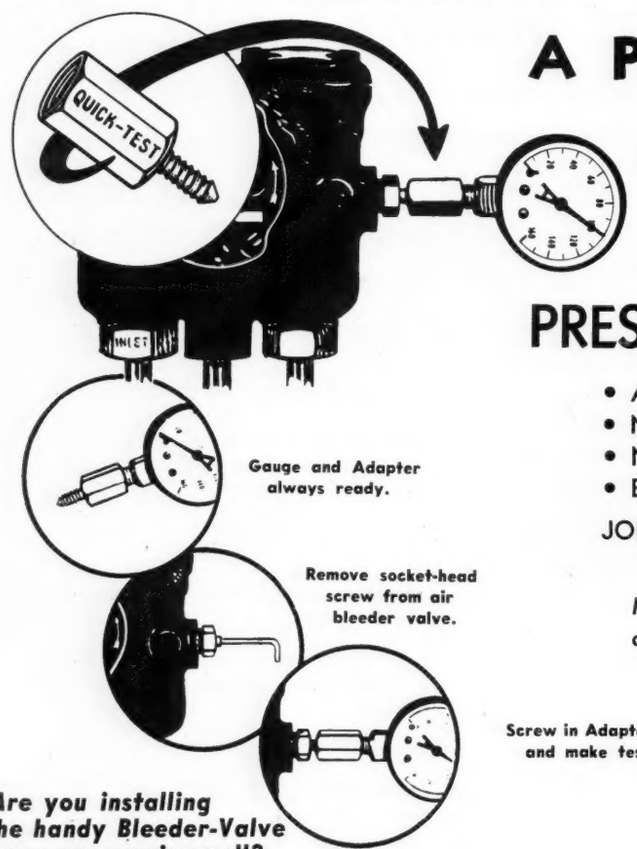
"From all quarters of the nation," says the foreword of the report, "there is concern on the part of gas companies because of the flood of inferior heating equipment being sold and installed with little background experience on the proper and safe installation of gas heating equipment. Experience with many new installations early in the 1946-1947 heating season verifies that this concern is well founded."

The report states basic principles that should be followed by utilities to be sure equipment that goes on their lines is satisfactory, and that installations are properly made. It also contains the upgrading plans for four of the larger gas utilities.

◈

St. Paul 40% Oilheated

IN ITS "1947 CONSUMER Analysis of the St. Paul Market," the St. Paul *Dispatch-Pioneer Press* discloses that 39.6% of homes in the city, or 37,796 homes, are oilheated. This includes both centrally heated homes and those using space heaters. Coal has 59.6% or 56,868 homes, while 572 homes (0.6%) use both oil and coal. Gas, manufactured and high priced in so cold a climate, has only 127 homes on its heating list, or 0.2%. However, a few months ago the citizens voted to have natural gas when pipelines can be laid.


QUICK-TEST
INLET
Gauge and Adapter always ready.
Remove socket-head screw from air bleeder valve.
Screw in Adapter and make test.

Are you installing the handy Bleeder-Valve on every service call? LIST PRICE 32c

A PRESSURE READING *in less than 60 seconds*

. . . with the QUICK-TEST PRESSURE GAUGE ADAPTER

- A new service tool for testing fuel unit pressure.
- No valves to remove.
- No more frozen or mutilated pipe plugs to remove.
- Eliminates bruised knuckles.

JOBBERS: Write for interesting proposition on this fast-selling service tool.

If your local jobber does not stock the Quick-Test Adapter, order direct, 90¢ Post Paid.

Hydrovalve Co., 262 West 38th St., N. Y. 18, N. Y.

Please send me ..... adapters at 90c each. I enclose check for $.....

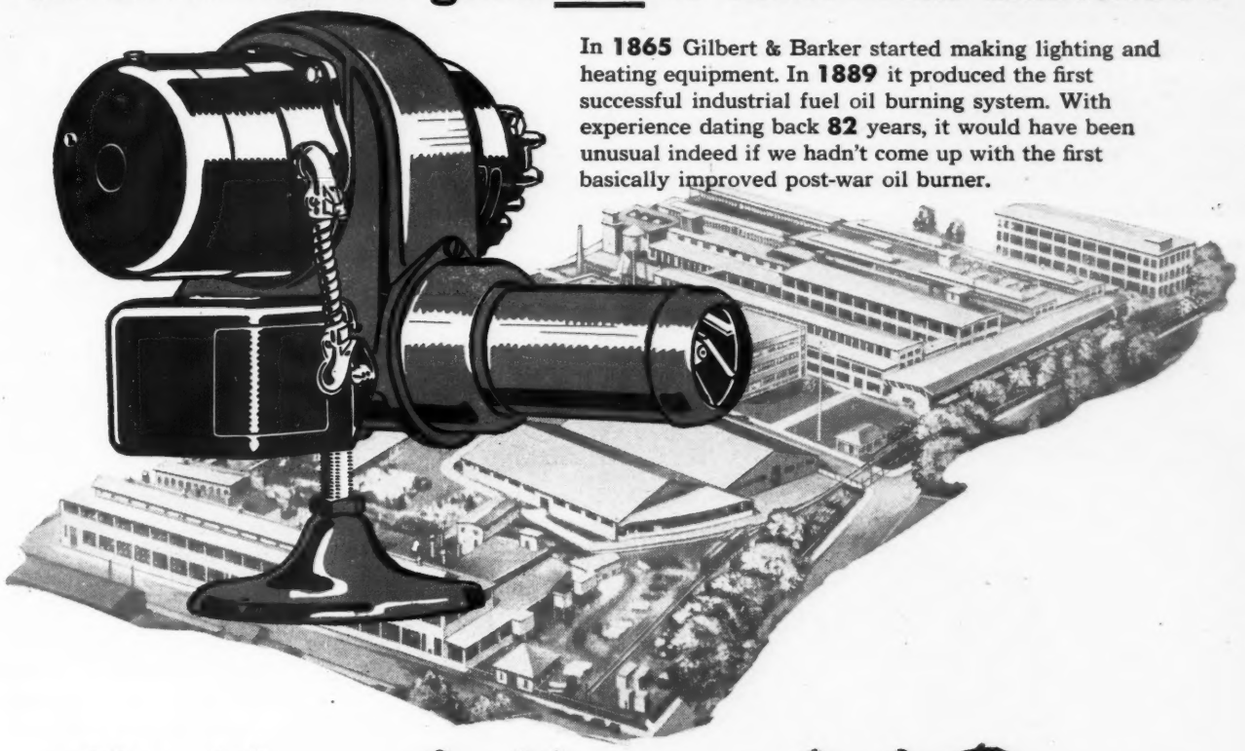
NAME .....

ADDRESS .....

CITY ..... ZONE.... STATE.....

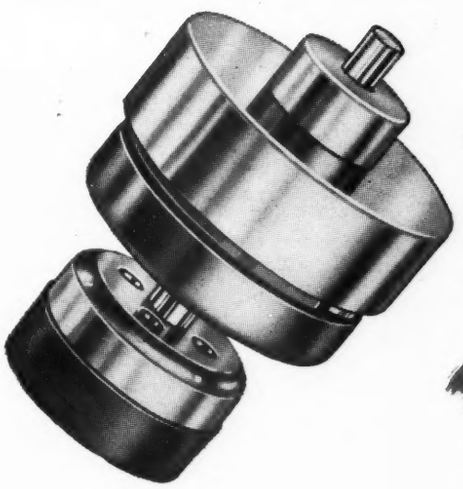
JOBBER .....

An oil burner this good HAD to come from GILBARCO!



In **1865** Gilbert & Barker started making lighting and heating equipment. In **1889** it produced the first successful industrial fuel oil burning system. With experience dating back **82** years, it would have been unusual indeed if we hadn't come up with the first basically improved post-war oil burner.

The New Gilbarco Oil Burner



HAS THE EXCLUSIVE ECONOMY CLUTCH—

It's a patented operating principle that is the most significant home heating advance in 25 years!

It gives customers *new* heating economies . . . and it gives *you* a sales edge over competitors!

BY BUYING A GILBARCO ECONOMY CLUTCH OIL BURNER, *the home owner gets:*

★ Greater fuel economy ★ More uniform heating
★ Maximum heat ★ Cleaner heating ★ New quietness

BY SELLING THE GILBARCO ECONOMY CLUTCH OIL BURNER, *you get:*

★ The advantage of a world-famous name.
★ The benefit of a recognized superior product.
★ The record years of manufacturing experience and skill.
★ Home-owner interest that can mean real profits.

DEALERS WEST OF APPALACHIANS . . . apply for franchises now! Profitable locations and areas are still open. Write or wire!

Gilbarco

THE OIL BURNER WITH THE ECONOMY CLUTCH

GILBERT & BARKER MANUFACTURING CO. • WEST SPRINGFIELD, MASS. • TORONTO, CANADA

fueloil & oil heat

Allied Explains Tight Fuel Situation To Ohio Customers

ALLIED OIL CO., Cleveland, has placed a series of 1344-line advertisements in Ohio newspapers warning against a shortage of all fuels in the state this winter, and urging strong conservation measures on homeowners. This campaign follows two other recent warnings in the same area by Oil Heat Institute of Northern Ohio, and by Standard Oil Co. (Ohio).

Unlike the others, Allied does not confine its warning to fueloil users, but points out that Ohio imports most of its fuels, and all transportation is short. For this reason every type of fuel should be used with care for efficiency, and not wasted.

Outlining Ohio's fuel needs, the copy explains, "Today we burn 25% more coal than we did before the war; 50% more natural gas and over twice as much fueloil. Fueloil demand has grown so much faster than the others because so many Ohio industries and Ohio homes have switched to this convenient, dependable fuel. It seems as though everybody—looking for a dependable supply of fuel—is asking for oil because the oil industry has established such a great record in meeting all demands everywhere—in war and peace."

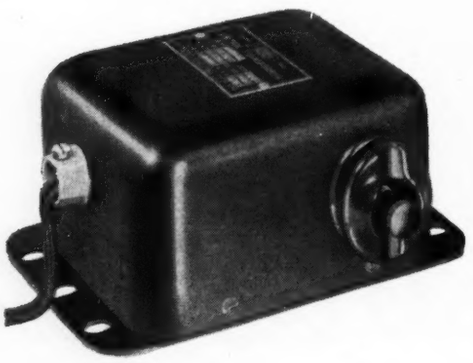
Allied Oil is the leading independent fueloil supplier in the area, and supplies light and heavy fueloils in Ohio, Indiana, Pennsylvania and New York. Subsidiary companies include a refinery in Canton, a terminal storage company, a pipeline company, a Mississippi River barge fleet and Great Lakes tankers used to transport fueloils.

Company officials say, "We thought it was time somebody declared a united front for all fuels in Ohio during this transportation emergency—to make sure that Ohio homes, schools, and other institutions have enough fuel to keep warm—and to make sure that industry gets enough oil, coal and gas to keep running.

"While most of the readers of this advertising are household consumers, every gallon of oil, every ton of coal, every cubic foot of gas they save at home this next winter will help supply essential fuels to industry. We can't afford to have steel plants or any other plants shut down for lack of fuel at this time.

"In a way, the fueloil business is paying the penalty for the oil industry's unbroken record of meeting all demands. Everybody who has had any difficulty in getting adequate supplies of other fuels now wants fueloil. We've got the crude oil—we've got refinery capacity—but transportation to the places where fueloil is used is inadequate to meet the record-breaking demands.

"We believe this is the first time that an oil company has taken paid advertising space to speak up for competitive fuels. We believe the advertising is in the community interest—and good public relations for Allied Oil."



DEPENDABLE

YEAR-IN AND YEAR-OUT

Dongan Transformers have long been used on leading makes of oil burners. For long life and dependable service, you can't beat a Dongan! Listed as standard by Underwriters' Laboratories.

Write for Bulletin.

DONGAN ELECTRIC MFG. CO.

2981 Franklin Detroit 7, Mich.

The Dongan Line Since Nineteen-Nine

WRITE FOR LITERATURE

DONGAN TRANSFORMERS

"Confound it, Mr. Williams, I thought you were too busy to see me!"

Because Their Development is Based Upon a Full Understanding of Heating Industry Requirements

WEBSTER ELECTRIC TRANSFORMERS

When a Webster Electric Transformer goes into service it is a guarantee of top performance—positive ignition under all conditions; long, dependable life, freedom from ignition troubles. Webster Electric Transformers are of well balanced design that is an outgrowth of thirty years of research and manufacturing experience.

They are widely used as standard by the industry and are well adapted to simple and convenient replacement.

Webster Electric Transformers have the following features:

Easy interchangeability.

Three sizes offer wide adaptability.

Extra sized junction boxes provide easy connections.

Separate mounting plates for replacement.

Secondary coil protected by mica insulation.

FACTORY TRAINED FIELD SERVICE AT KEY POINTS

No dealer is very far away from Webster Electric factory-trained and equipped service. Webster Electric Authorized Service Stations are located at many key points for servicing pump elements that are best handled by experts who use only *genuine* Webster Electric parts. This unique authorized Webster Electric field service is available to every oil burner dealer. Write for a list of names and addresses of these authorized field service stations. We feel sure they can be of considerable help to you.

rive to arm

Thermodrive is designed to regulate the fan speed in a forced warm air heating system so as to give more even room temperatures, less stratification, more comfort.

Thermodrive automatically increases fan speed as bonnet temperature increases. Speed increases can be as much as 65 percent from low to high. The off-cycle operation is reversed, and fan continues at decreasing speeds until cut-out temperature on bonnet control is reached.

A warm air "sample" is continuously drawn from the bonnet and discharged over a thermostatic bellows, which in turn actuates a sliding sheave of a split pulley. This changes its effective diameter and results in either increased or decreased speed of the fan.

Write for full information today.

WEBSTER ELECTRIC

RACINE WISCONSIN

Established 1909

Export Dept.: 13 E. 40th Street, New York (16), N. Y. Cable Address "ARLAB" New York City

"Where Quality is a Responsibility and Fair Dealing an Obligation"

Oil Leads Fuels In Consumer Survey

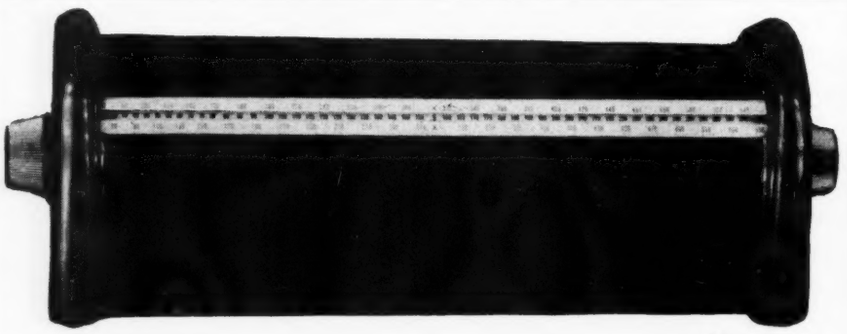
HOME BUILDERS, AND THOSE planning to build, prefer oil above all other fuels it is shown in the September issue of "Home Building News" issued by the editors of *Small Homes Guide*. The Small Homes Guide staff surveys prospective home builders each month to determine trends.

Now 45% of home builders want to heat with oil, according to the survey. Gas, which led the fuels in preference for some time, has dropped to 33% and coal trails with 8% preference. A growing number (6%) are planning on electric heating devices, and 8% have not made up their minds.

It is interesting to compare the Small Homes Guide finding with the averages of seven national surveys made two years ago. The averages were 44% for oil, 33% for gas, 18% for coal, and 5% for electricity and other fuels. At that time SHG found 21% for coal, 37% for oil and 28% for gas.

The most recent SHG survey shows a 29% preference for warm air, 25% for radiant heating, 19% for forced hot water, 10% for space heating and 5% want steam. The 15% remainder have not decided.

Prospective home builders now expect the home will cost $9,269.00 on the average; $1,000 more than a year ago, and about double the expected cost two years ago. The full basement is returning to popularity with a preference of 48%; 18% for a part basement, and 28% want no basement at all. Most popular plans are one-story with three bedrooms.



SCHEDULING AUTOMATIC FUELOIL DELIVERIES SIMPLIFIED WITH THE----

ROLL-RULE DEGREE DAY CALCULATOR

Copyright 1947

The Roll-Rule accurately computes "K" factors and schedules Degree Day Deliveries in a fraction of the time required by any other method.

It has been designed especially to meet *YOUR* requirements and to save you time during your peak load season.

NO EXPERIENCED OPERATOR REQUIRED—
NO MECHANICAL PARTS TO FAIL—
NO EXPENSIVE INSTALLATION INVOLVED—
SITS ON YOUR DESK WITHIN EASY REACH—
PORTABLE—(TOTAL WEIGHT 7 LBS.)

System Can be Self Taught in a few minutes from printed instructions.

Save money with the time saving, effortless operation of the ROLL-RULE DEGREE DAY CALCULATOR.

Can you afford to continue your present method of calculating when the ROLL-RULE costs only—$30.00?

MANUFACTURED BY —

RUE MANUFACTURING COMPANY
1429 MELON STREET
PHILADELPHIA, 30, PA.

New Home Building Well Above Last Year

PRIVATE BUILDERS started 80,000 new permanent homes in July, shattering records of 20 years standing and approaching the all-time high of 1925, according to preliminary estimates of the Bureau of Labor Statistics of the U. S. Department of Labor. The number of new dwelling units put under construction in nonfarm areas of the country exceeded the June total by 2,800 and the July 1946 total by 17,400.

Homebuilding for the first 7 months of 1947 showed an increase of 38,300 units over the same period in 1946. So far this year 441,000 units have been put under construction.

Well over two-fifths of all the nonfarm homes started in recent months were located in suburban and outlying areas, in contrast to one-fifth in the 1920's and about one-third in 1939.

According to preliminary reports of local building permits issued in July for new home construction, Seattle, Philadelphia, Detroit, and Chicago were the only large cities showing considerable gains. In fact, such important centers as New York, Pittsburgh, New Orleans, Little Rock, Dallas, Long Beach, Baltimore, and Washington registered a decline in the number of dwelling units for which building permits were issued. This is another indication that the smaller towns and villages are responsible for an increasing share of the rising volume of new home construction under way.

Byrnes MacDonald has been designated assistant director of public relations and advertising, Sinclair Oil Corp., New York, N. Y. He joined Sinclair in 1946

Explore THE NEW PROFIT POSSIBILITIES OF THE KRESKY OIL FLOOR FURNACE

MEETS DEMAND FOR LOW COST OIL HEAT FOR SMALL HOMES··· A "NATURAL" FOR S-T-R-E-T-C-H-I-N-G OIL SUPPLY

Already one of the biggest sellers among oil burning units in America, the Kresky Oil Burning Floor Furnace is adding substantial new profits for Kresky Dealers everywhere.

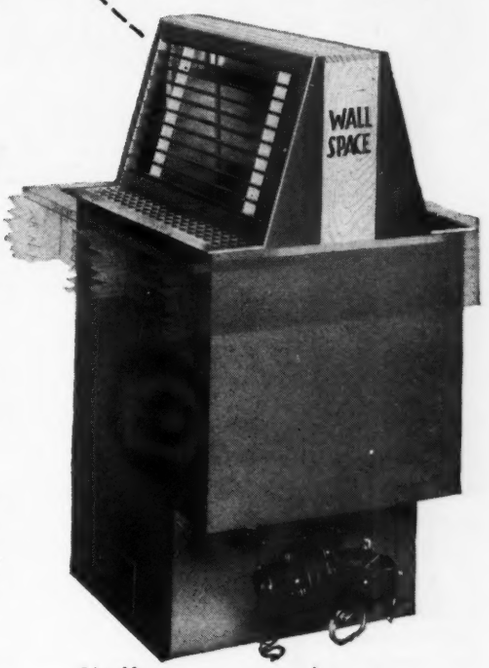
Built by the originators of oil burning floor furnaces, it is still the only oil-fired floor furnace with forced air circulation bearing the Underwriters' label.

Equipped with the famous Kresky Burner with its patented mechanical air induction, it burns a clean, odorless, intensely hot flame with FUEL ECONOMY that makes it a "natural" for present conditions.

Available in either dual-wall or floor-register type... manual or automatic thermostatic control. Available in four sizes.

Easily installed... requires as little as *30 inches clearance below floor.* Simple in design, durable in construction... the nearest thing to trouble-proof for dealers and owners alike.

Due to recent doubling of manufacturing facilities we are making immediate shipments. Write for Dealer Franchise Plan.



Listed by UNDERWRITERS' LABORATORIES

Kresky

OIL BURNER

KRESKY MFG. CO., INC.

Pioneers in Oil Burning Equipment Since 1910

PETALUMA CALIFORNIA

HEATING · COOKING · HOT WATER · INDUSTRIAL

fuel oil & oil heat

as executive assistant to the president and is a Naval veteran of World War II.

Donald P. Trompeter has joined the sales force, Neptune Meter Co., New York 20, N. Y., and will make his headquarters at the company's Chicago office. In 1945 he graduated from Northwestern University with an Ensign's commission and after further study served with the fleet in the Pacific area. His service terminated in July 1946.

Wilbur F. Hosmer, prominently associated with the heating and engineering field in New England before the war, is now sales manager in charge of the New York office, Williams Heating Engineers, New York, N. Y. He will administer the concern's program of expanded customer services, sales and advertising efforts in Greater New York City and vicinity. Mr. Hosmer served with War Production Board in 1942 and later was with the New York Regional Office of the Housing Expediter.

Robert E. Bingham is directing a department of market research and analysis, established by Black, Sivalls & Bryson, Inc., tank manufacturers, Kansas City 6, Mo. The department, a part of the company's industrial and public relations division, will ascertain long range consumer needs to permit coordination of production to meet needs as they arise.

Gordon W. Wheeler has been named manager, export department, Henry Valve Co., Chicago, Ill. Since the war he has been active in general sales of Henry valves, strainers and accessories for refrigeration and air conditioning and the recently added line of solenoid valves.

A. L. Murray will have charge of all credit transactions in his position of assistant credit manager, Duo-Therm Div., Motor Wheel Corp., Lansing, Mich.

Lt. Col. W. Allen Stone has become regional sales manager in the Cincinnati area for Trion, Inc., Pittsburgh, Pa., manufacturers of electric air filters. Prior to the war, during which he served on the staff of the president of Peru in an engineering capacity, Col. Stone was county engineer, Hamilton County, Ohio and also owned and operated Stone Eng. Co., Cincinnati.

Paul L. Olesen has been named eastern manager, Automatic Devices Co., Chicago, Ill., manufacturers of Weather-Man outside type temperature control. Mr. Olesen, who has had many years experience in the automatic heating field, will maintain an office at 5 Beekman St., New York 7, N. Y.

Gordon Kinsman

GORDON KINSMAN, 52, a well known figure in the oilheating business for many years, died at Dayton, Ohio, September 12. He was chief engineer for the Lau Blower Co., Dayton, at the time of his death.

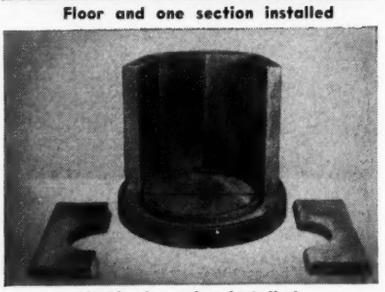
Mr. Kinsman entered the oilheating business in October 1920 with the International Burner Corporation, manufacturer of the Caloroil oilburner. In 1932 he went to the Caloroil Burner Corp., Hartford, when the company was sold and moved from New York. Later he went to Airtemp Division of Chrysler Corp., Dayton, as an oilheating engineer, and more recently became associated with Lau as chief engineer.

Burial took place September 15, at Johnson City, N. Y.

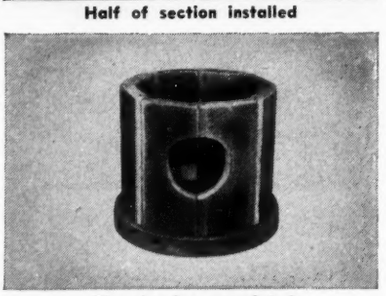
JUST OUT!

R & I Deluxe Chamber — Complete with FLOOR — in one package

Floor and one section installed



Half of section installed



The chamber completed

R & I Deluxe Combustion Chamber has a precast floor made of the same refractory as the sides, and has grooves into which the segments can be quickly and easily fitted, after which they are locked in place with bonding clips.

This saves the time of mixing, pouring, troweling and drying out of floor.

The R & I Deluxe Combustion Chamber is 14″ high inside, 15¼″ high outside, and will go through any boiler door.

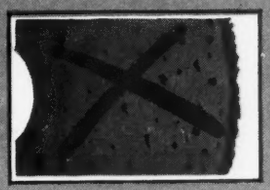
Each chamber, with floor and clips, is packed in a strong carton, eliminating the danger of breakage and getting pieces mixed or lost.

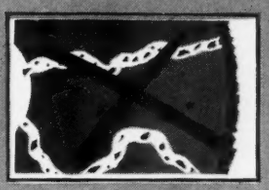
Your supply house has R & I Deluxe Chambers. Write us for Bulletin OB-99.

REFRACTORY & INSULATION CORP.
116 WALL ST. NEW YORK 5, N. Y.
Chicago 4, Ill. Newark 2, N. J.
Philadelphia 3, Pa.

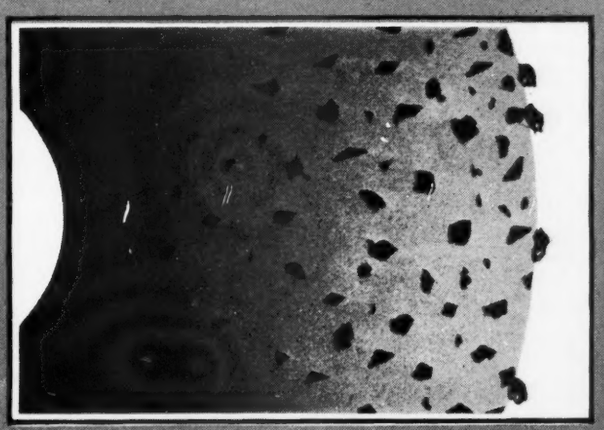
R&I Deluxe Combustion Chamber

New Micronic Filter Principle Makes Good News to Oil Burner Users





Other depth-type filter elements are susceptible to surface loading and channeling. Minimum openings on pressure side cause dirt accumulation on surface — element clogs before filling. Uncontrolled distribution of filter media in element permits fluid to find channels, passing solids larger than specified.



Cross-section of MICRO-KLEAN oil burner filter cartridge. A newly-developed method of "felting" and impregnating micronic fibres creates a fibre distribution which increases in density in direction of flow. Spaces between fibres become progressively smaller and more numerous approaching discharge surface. Graded Density in Depth eliminates surface-loading, permits more solids of all sizes to be collected within the element. Resinous Impregnation bonds each fibre in position, preserving original fibre distribution, giving absolute protection against channeling, rupturing, shrinking, distortion.

CUNO MICRO-KLEAN Oil Burner Filter...

NEW Specially Designed ...Available Now!

Model ICI Cuno MICRO-KLEAN Oil Burner Filter. Strong lightweight aluminum housing quickly disassembled for cartridge replacement by removing single cap nut.

Investigations by oil burner manufacturers show that the new Cuno MICRO-KLEAN Oil Burner Filter provides the most efficient, lowest-cost protection for burner nozzles against micronic particles, rust and water in the fuel.

Exclusive construction features help the MICRO-KLEAN element to remove *more* of the smaller particles. (See above.) Channeling, which would permit foreign matter to pass through the filter, is positively prevented; and so is surface-loading, which would prematurely clog the element.

Model ICI is expressly designed for oil burner service. Standard replacement cartridges will also fit many other oil burner filters already installed.

CUNO

Fluid Conditioning

REMOVES MORE SIZES OF SOLIDS FROM MORE TYPES OF FLUIDS

Cuno MICRO-KLEAN Oil Burner Filters and replaceable cartridges are manufactured by the company whose filters are used more often in industry than any other brand.

Send Coupon for Information on Micro-Klean Filters.

Cuno Engineering Corporation,
851-A South Vine St., Meriden, Conn.

Please have nearest Cuno representative provide information about Cuno MICRO-KLEAN Oil Burner Filters and replacement cartridges.

Name.....Title.....

Company.....

Address.....

fuelfoil & oil heat

Readers' Forum

GENERAL REFRACTORIES COMPANY
Philadelphia, Pa.

Editor:

I have read the article by J. W. Schulz in the August issue of FUELOIL & OIL HEAT. I started to read this article with a great deal of interest because I feel that any contribution to factual knowledge on this subject is worthwhile.

Early in the article he refers to a dealer who installed brick which Mr. Schulz refers to as old style firebrick and old-fashioned firebrick. We knew that there were styles and fashions in wearing apparel, in furniture, in architecture, automobiles and perhaps even kitchen pots and pans, but frankly it is the first time that we had heard that styles and fashions governed the purchase of firebrick. In fact we firebrick peddlers have often wished that we had something as captivating as a change in style or a dictate of fashion to liven up the interest in a material which is to the average layman rather unromantic in its appeal.

Of course, I can guess that Mr. Schulz is referring to the fire clay brick as old-fashioned and insulating firebrick is probably what he has in mind as being the new style. It may be that insulating firebrick is the answer to the proper selection of material for oilburner fireboxes. We have sold many hundreds of thousands, perhaps millions, of insulating firebrick for this purpose, but from our position as a large manufacturer of refractories and from the re-actions of our dealers and customers, we are not convinced that insulating firebrick is the whole story.

There are in general four types of refractory material being used for oilburner fireboxes, namely, fire clay brick, that is burned brick, plastic fire brick, clay base castable refractory and insulating fire brick. Successful installations can be demonstrated using any of these four materials. A great many stock combustion chambers are made from castable refractory, certainly the least satisfactory from the users' standpoint.

In selecting any of these four general types there are three principal hazards which cause the failure of refractory materials which must be considered. One is fusion or deterioration under extreme heat. Another is spalling or cracking due to unequal thermal expansion and the third principal hazard is erosion due to flame impingement or molten fly ash, etc. In addition to these hazards other factors to be considered in selection is ease of installation (whether the material comes in readily used shapes or tailor made units), ease of handling, obtainability, and, last but not least, cost.

The best brains in the refractories business have known for years that there is no single answer to the question of what is the best refractory to use in any particular type of installation. There are too many variables involved, but there are certain simple easily stated facts which may be a guide to the intelligent selection of the right refractory.

P. F. CALLAGHAN,
Manager, Distributor Sales.

New York, N. Y.

Editor:

On page 92 of your August issue is an article by Charles W. Fisher dealing with proposed improvements in oilheating. I offer these additional thoughts on the subject:

The author indicates that the accepted

"NEW TYPE CORD"
FUEL OIL HOSE

NOW . . . with a tougher, longer-wearing brown cover; *plus* greater flexibility; *plus* all the other features for which this hose is famous . . . non-flattening, kinkproof, construction; oil-proof tube; full flow; etc. *Contact our nearest branch for prices.*

GOODALL RUBBER CO., INC.
THE GOODALL-WHITEHEAD COMPANIES
Philadelphia • Trenton • New York • Boston • Pittsburgh • Chicago • St. Paul • Los Angeles
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. . . the streamlined, one-piece, all-welded, boltless design of Heil Truck Tanks provides unusual strength and freedom from trouble, as well as maximum eye-appeal

Heil's "smooth-skin" one-piece design, with its unobstructed surfaces, provides a neat, attractive appearance, and plenty of space for your name. Its eye-appeal helps greatly in building customer acceptance for your products.

But let's look at some of the structural details made possible by Heil's famous method of construction. They serve to keep your maintenance costs down; they enable you to carry bigger payloads, and they assure greater safety:

- **One-piece, all-welded design** eliminates the need for cross bolsters. Saving in weight enables truck to carry bigger payloads. There are no separate parts to fight each other and cause wear, or to loosen up and rattle. Maintenance is greatly reduced — and operating efficiency increased.
- **Deep-dished heads** protect against failure from surging loads.
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Order a Heil Truck Tank now and actually see it out-perform your other units — by giving you less trouble, by costing you less for maintenance, by making more trips per year, and by carrying larger payloads. Write for latest bulletins.

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T-216

ratio is 125 gallons of oil to a ton of coal. Although he finds room for improvement in this, the situation is, according to the opinion of many oilheating authorities and equipment dealers, even worse for oilheating than the figure of 125 indicates. Frequently 135 gallons of oil is said to equal one ton of coal, and according to many oilburner dealers the figure is closer to 150. I am not speaking of the exceptionally well done jobs on which 90 to 100 gallons of oil equals a ton of coal, and I am not speaking of the exceptionally sick jobs which use 200 gallons of oil in place of one ton of coal.

By thoroughly good engineering of the installation and service work, we can make a quality installation use 90 to 100 gallons of oil to do the work previously done by one ton of coal. We should, I earnestly believe, aim for this.

But a revolution in oilheating equipment design is not needed for the sake of improved comfort and reduced fuel bills, as Fisher indicates in his article.

It is not that we should consider all modern oilheating equipment as good enough. But, more important we should produce modern oilheating performance in more of the oil-heated homes. I'll comment on the points made by Fisher, in my efforts to explain my belief that there is no need right now to turn upside down the principles employed in designing oilheating equipment, and in laying out particular installations.

1. One room thermostat is not inadequate for controlling the temperature of a small home, as the author indicates. (He says that a room thermostat is inadequate except for a one-room building, such as a barn or church.) Improvement in heating, at some extra cost, is gained by using two thermostats, one upstairs and one downstairs, for a two-zone heating plant in a five or six room two-story house. But to recommend that a thermostat be installed in every room of a typical five or six room house is not within reason.

2. As his second point, the author blasts at the use of circulator pumps, special tee's for hot water forced-circulation systems, adjustable radiator vent-valves, etc., terming them "improvisations" and declaring they fall short of handling problems related to effects of wind, sun, and occupancy factors on heat losses.

Study carefully a modern forced-circulation hot water heating plant in a small home, perhaps a no-basement home. If the circulator in the system is an improvisation, then what is needed in place of it to produce better results?

Study the performance of a well-designed one-pipe steam plant in a low-cost home. Can you produce better heating and better year-round hot water, and wind up with a heating plant that costs, say, half as much as the accepted form of the one-pipe steam plant? If adjustable radiator vent-valves are an improvisation, what really is needed in place of them, for such a system?

3. The author's point three gets into trouble on this score. (He says that eight room thermostats should be used for a ten-room house, and that half the boiler size and firing rate can be used "when only one or two rooms at a time call for heat.") With proper-capacity heating equipment giving heat to each room, and with the proper gph rate, an oilburner should operate a total of about 18 hours on a severely cold day (a zero day, where the design temperature is zero outside).

Designing for additional hours of burner operation on the coldest day of the

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HERCULES FUEL OIL SLUDGE SOLVENT

HERCULES FUEL OIL SLUDGE SOLVENT requires no draining or flushing. Just pour it into the fuel oil tank when the next delivery is made. It keeps sediment in suspension, removes sludge from the oil tank and carbon from the preheater and refractories. It is non-injurious to metal and will prevent rusting, pitting, clogged strainers and nozzles. It is the perfect safeguard against waxes and other impurities resulting from new cracking processes.

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Burner casting is heavy cast iron shell of one piece construction —machined to extreme limits, rigid and free of vibration.

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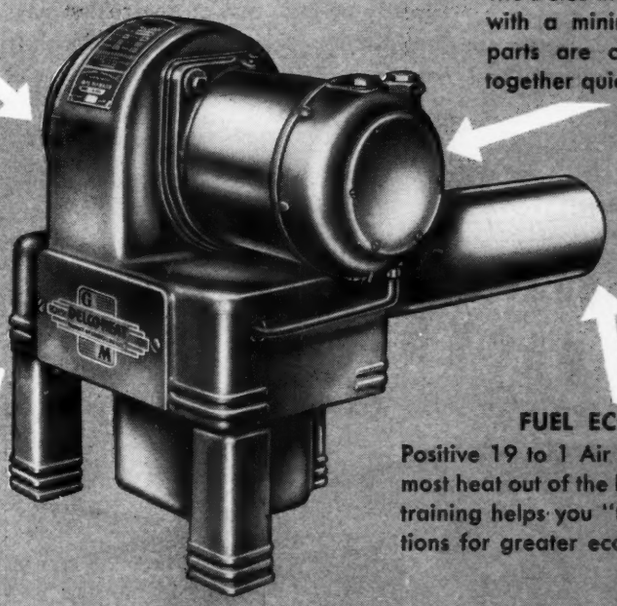
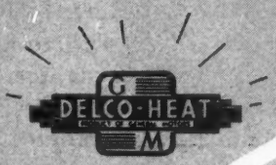
The Delco motor performs smoothly with a minimum of vibration. All parts are co-ordinated to work together quietly and efficiently.





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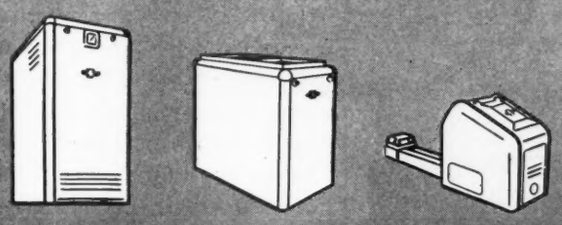
FUEL ECONOMY
Positive 19 to 1 Air Turbulation gets the most heat out of the least fuel oil. Factory training helps you "tailor" your installations for greater economy of operation.

These GM Sales Features are keyed to your prospect's buying motives

Everybody in the market for automatic heating equipment is interested in one or more of the following basic buying motives: health, bodily comfort, cleanliness, home comfort, economy, efficiency, pride of ownership and service. Shown above are only a few of dozens of advanced features which meet every one of these needs. For plenty of features—and plenty of profits, sell Delco-Heat. Franchises are still open in a few territories. Write. Mail the coupon below.

A COMPLETE LINE FOR ALL THREE FUELS (OIL, COAL AND GAS) FOR ALL TYPES OF HOMES AND HEATING SYSTEMS



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Gentlemen: I am interested in your plan for dealers.

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heating season has obvious drawbacks. For example, the house temperature rises too slowly on coldest mornings when the setting of a clock thermostat shifts from 55° to 72°.

Instead of trying to use a half-size heating plant on the basis he outlines, the author should make certain that, on the installations he actually is servicing today, the fire sizes are so low that the burners operate 18 hours out of 24 on the coldest days of the winter.

Also, he should stop installing oversize heating equipment for every room, if that is what he has been doing, and if that is what causes him to suggest that only one or two rooms (in a ten room house) should need heat at any moment on a cold day. He can gain great improvement in heating, to judge from what he says, by providing the proper heat output (not greatly excessive heat output) from the radiator or the warm-air duct used to heat each room. Probably in radiator plants, for example, he has installed radiators so greatly oversize that on the coldest days the radiators did not have to provide their maximum heat output steadily, or for at least 18 hours out of the 24 hours in a day.

4. The author's fourth point is that oil-heated buildings are "more drafty" than buildings heated by hand-fired coal plants. Part of the answer lies in having the burner operate for 18 hours on a very cold day, as explained above. But the complete answer lies in the proper use of the highly-developed modern heat control systems (such as the Moduflow system) together with an excellent, modern heating plant, and of course the proper gph rate.

He stresses the need for fresh air for an oilburner flame, the occupants, and any gas-burning appliances. Using modern heating and ventilating equipment, he can easily provide metered, controlled amounts of outside air for every room, if he finds this is needed as badly as he outlines. He can easily provide metered amounts of outside air from a furnace-type heating system, or from a split-system or indirect-system of the boiler type.

Most heating engineers and home owners, however, do not agree with him with respect to the importance of providing special ventilating equipment for ordinary homes. That is the reason why most homes do not include ventilating equipment.

5. The author says it is not too difficult to develop equipment which will have no oil leaks, odor, or ignition failure. That is true. The experience of many good equipment dealers of the past ten years proves that the best equipment has been free of these defects. If fewer service calls is what the author is arguing for, few will disagree with him. We have remarkably few service calls on our best installations; we hope to make service calls still more rare. Incidentally, the home owners, not the equipment, are to blame for most of the service calls we receive today from certain of our best installations.

6. The author indicates his belief that the weakest links in oilheating are the controls, the oil pumps on the burners, and the combustion chambers. Unless he knows of the work being done for years by large control manufacturers, in the direction of developing faster-acting safety controls for oilburners, he has no appreciation of the magnitude of the problem attached to stopping a burner instantly upon ignition or flame failure. This has been done. It can be done. Can the author of this article provide the equipment which is able to do this and which is prac-

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A completely welded steel heating plant with the NEW and revolutionary patented oil burning principle that squeezes more heat out of every drop of fuel . . . that has the same heating capacity in a fraction of usual boiler size . . . that is as automatic as an electric refrigerator or radio! The Bethlehem Dynatherm is the ONLY oil burner that may use the money-saving, fuel-saving "whirling flame"—the secret of its amazing performance.

A few exclusive Bethlehem Dynatherm territory Franchises are still available. Wire or write immediately for full information.

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ALL *Paracoil* FUEL OIL HEATERS

Whether for the small heating plant

6D48-5 U-Tube Type Fuel Oil Heater. Below Water Line Service. Capacity (No. 6 oil) 116 GPH 90°F.-150°F. Boiler Water 212°F. Weight 175 lbs.

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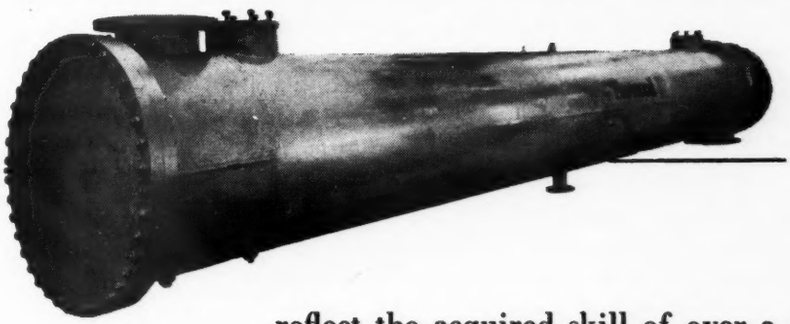

AF-288D Straight Tube Type Fuel Oil Heater. Bulk Station Service. Capacity (No. 6 oil) 120,000 GPH 100°F.-160°F. Steam at 15 PSIG. Weight 12 tons.

reflect the acquired skill of over a quarter of a century's close application of doing one thing well. PARACOIL has been building good oil heaters of every type and size—for every service—since 1915. Major oil burner companies have recognized the soundly based designs behind these PARACOIL heaters and are flatly specifying them to their dealer and distributor organizations. Write for your copy of our new Bulletin 60 for the reasons why.

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fuel oil heat

tical and suitable for typical domestic installations? To point out only that it "should be done" gets us nowhere. Similarly we can dream that good cigars should sell for a nickel, and that 150 horsepower motor cars should travel 50 miles on a gallon of gasoline.

Many engineers do not agree with the author that the pressure burner makes excessive noise and uses excessive electricity. There are good reasons for making the pumps in fuel units as large as they are; smaller pumps, and pumps of different design which handle the gph being burned, have given trouble in the development stages.

The author's new idea about considering oilburners and combustion chambers as carbon monoxide generators will, if it holds water, turn upside down all the present accepted knowledge of combustion engineers. What he takes as obvious (he says "obviously the generation of carbon monoxide from a hydrocarbon gas progresses in two stages," for example) is not held to be correct in the field of combustion engineering.

We must question his statement, "Carbon monoxide is generated at the wrong end first," as unclear. Seemingly there is no sound basis for his assertion that the average combustion chamber "reflects only 5% to 10% of the radiant heat of combustion to the point of carbon monoxide generation," and that an increase in these percentages has much to do with "proper contour" of the firebox and with "implementing" the use of Nos. 4 and 5 oils on domestic installations.

7. The author can't find the "reputed utility and economy" of summer-winter hot water layouts. Yet, hundreds of thousands of these are in use, serving home owners very nicely. They provide a luxurious supply of hot water during the heating season, with fuel cost of heating the water so low that it is difficult to evaluate. In summer, perhaps one extra load of oil goes to a 275-gallon tank, as the cost of heating water for the four months.

Methods for cutting the summer oil consumption of typical installations in half have been devised by numerous engineers. But typical installations on which these methods (including installation of a tank temperature control) have not been used do not waste such vast amounts of fueloil as to cause loud complaints from typical home owners.

Typical installations, then, do not use tremendous amounts of oil in summer; but their oil consumption can easily be cut in half by improvements which are not very costly.

Seemingly the author is doing some inventing, when he mentions that a new valve and new control are needed to design the "burner-boiler-heating" as an integral unit, since what he speaks of does not have good meaning for men who know well the equipment now available for house-heating and water heating. An appreciation of the problems faced by manufacturers and their designers often comes of attempting to invent something different, for to outline what "should" be accomplished, and to actually get an improvement in any detail of modern oil-heating, are indeed two different things.

JOSEPH HADEN

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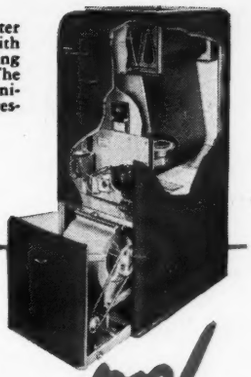
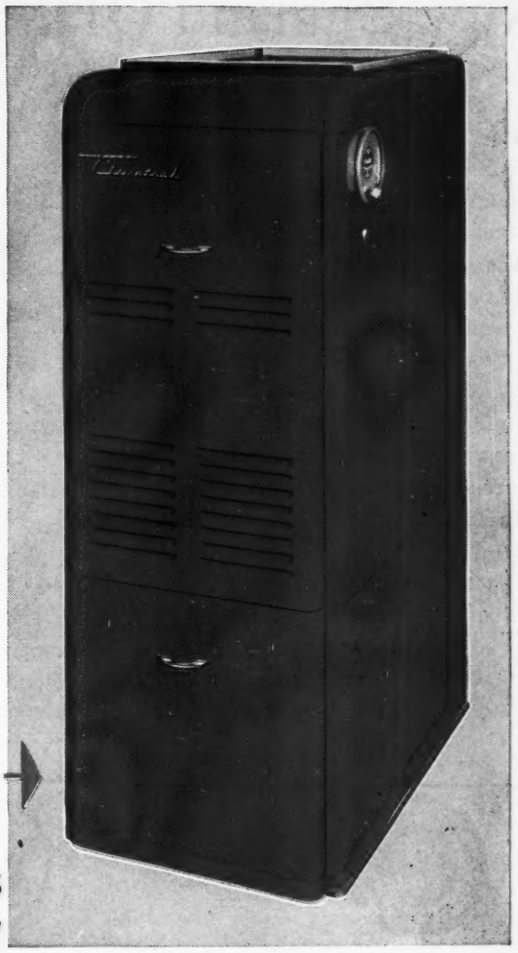
The new Mueller Climatrol Type 209 Winter Air Conditioner is a compact vertical unit with the blower assembly mounted in a ball-bearing Roll-a-Drawer below the heat exchanger. The heat exchanger is streamlined to provide uniform distribution of air, minimum static pressure, and high rate of heat transfer.



NEW

Mueller Climatrol Type 209 Oil-Fired Winter Air Conditioner



gives your customers unique features for extra convenience and economy

You can mark up another "first" for Mueller Climatrol: The Roll-a-Drawer — a service unit (patent applied for) which mounts the entire blower, motor, and drive assembly on ball-bearing rollers, so that it is completely accessible for adjustment and servicing, with a flick of the wrist.

The all-welded heavy steel heat exchanger is thermodynamically designed, has *no internal baffles* to cause strains or noises, is electric-arc welded throughout, with all passageways *easily cleanable* from the front access panel.

The Type 209 Mueller Climatrol is available in three sizes, with vaporizing or pressure atomizing oil burner, and is *shipped from the factory in a completely assembled package.* Compact in size, it easily goes through any normal closet door. Filters may be installed in the bottom, either side, or the rear of the handsome, green cabinet.

The Type 209 Mueller Climatrol sells itself to your customers and keeps them sold, by delivering the true indoor comfort of "climate control."

It really pays to capitalize on the big competitive advantage the Type 209 gives you. Sell it for new homes or to replace obsolete equipment. Write for complete information on the Type 209 today. *L. J. Mueller Furnace Company, 2009 West Oklahoma Avenue, Milwaukee, Wisconsin.*

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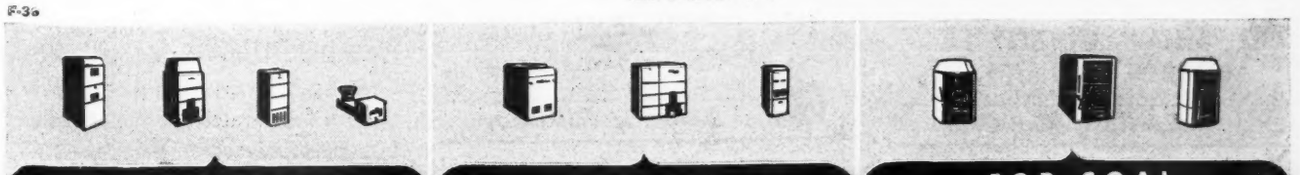


fueloil & oil heat

New England OHI Program For Public Acceptance

OIL HEAT INSTITUTE OF NEW ENGLAND is launched on a campaign to tell the public that it is safe with "Accredited Members" of the organization when buying oilheating equipment and fueloil. Newspaper advertising, decals on trucks and store windows, and framed certification in dealers' shops will carry the story of reliability to the public in the first such concerted effort in that territory.

Explaining the program at a series of meetings held in each region, Fred N. Beckwith, executive secretary, declared that only those members of OHI of N. E. who accepted in writing the "Standards of Technical Efficiency and Code of Fair Business Practices" would be eligible to become Accredited Members. Others, though not barred from membership in the parent organization, would not be recognized as eligible to participate in the program.

Two newspaper advertisements in each area will announce the program. The first, 5½ x 14½ inches, is headed "Oil Heat You Can *Depend* Upon," and offers the services of the Oil Heat Institute of New England to advise the public on oilheating problems. Prominently displayed in the ad is the Institute's seal, "Symbol of Reliability." Copy explains that Accredited Members who show the seal have subscribed to the technical and trade practice codes, and have the facilities to serve the public completely and well.

OIL HEAT INSTITUTE OF NEW ENGLAND
Symbol of Reliability
LOOK FOR THIS SIGN:
ENTIRELY NON-COMMERCIAL IN ITS PURPOSE — it has very real meaning to every user of Oil Heat!
OIL HEAT YOU CAN DEPEND UPON!
Get Free Advice from
OIL HEAT INSTITUTE OF NEW ENGLAND
The Institute has nothing to sell.
Its sole function is to offer sound advice to the Public . . . and to guide the Oil Heating Industry in Standards of Reliable Performance... Safety... and Fair Business Dealing.
SOME FACTS YOU'LL FIND WORTH KNOWING:
IF YOU PLAN to install Oil-Heating Equipment this Fall . . . or to use Fuel Oil in your present Equipment . . . the purpose of this Institute will be of very real interest to you.
The specific purpose of this Institute is to further the technical efficiency and reputable business practices of the Oil-Heating Industry in New England, as a whole — regardless of any proprietary commercial interests.
For this purpose, the Institute sets up certain STANDARDS OF TECHNICAL EFFICIENCY . . . in accordance with proven advances in Fuels, Engineering and Maintenance Service. As a further part of its purpose, the Institute sets up a definite CODE OF FAIR BUSINESS PRACTICES . . . based on honest-to-goodness dealings with each individual customer. *** Before you enter into any contract for Oil-Heating Equipment or Fuel, you will find it well worth while to learn about these TECHNICAL STANDARDS AND CODE — and what they really mean to you!
Every Member accredited by this Institute is required to give each customer, on request, an official copy of the TECHNICAL STANDARDS AND CODE. And each Member is firmly bound to all the obligations required of him under the Code.
If there is no Accredited Member in your vicinity, an inquiry to the Institute's Office will bring you full details by return mail. The address is 839 Beacon St., Boston 15, Mass.
OIL HEAT INSTITUTE OF NEW ENGLAND
CHAPTER: OIL HEAT INSTITUTE OF AMERICA
Symbol of Reliability

OIL HEAT INSTITUTE OF NEW ENGLAND
Symbol of Reliability
OIL HEAT TO DEPEND ON!
BY THIS SIGN...
...You may know ACCREDITED MEMBERS in your city. Here are the Standards they are pledged to:
AS YOU may know, OIL HEAT INSTITUTE OF NEW ENGLAND has no financial or other interest either directly or indirectly . . . in the manufacture or sale of any proprietary brand of Oil-Heating Equipment or Fuel Oil.
Those approved as Accredited Members of this Institute are actively competitive . . . one with another . . . selling and servicing various different brands of reputable Equipment and Fuel Oil. But all Accredited Members have this in common together:
Each has firmly pledged himself to the exacting STANDARDS OF TECHNICAL EFFICIENCY and CODE OF FAIR BUSINESS PRACTICES . . . as set up and strictly controlled by this Institute. *** There is not space here to state the very real meaning of these STANDARDS AND CODE. Except to say, in summary, that they do insure each individual customer of a high degree of thorough, safe efficiency — and of fair, honorable dealing.
It will pay you well indeed to get a copy of these TECHNICAL STANDARDS AND CODE. Each Accredited Member, listed below, is required to give a copy to any person who desires it, on request. And each Member is firmly bound to all the definite, specified requirements of his Membership in this Institute.
The following are Accredited Members in this area:
AJAX HEATING COMPANY: 504 Worcester Street, Newton.
GEORGE BURGESS OIL & BURNER CO.: 19 Elm Street, Dover.
ARTHUR CULLEN & CO., INC.: 127 Jamaica Road, Weston.
FRANCIS DENNEY, INC.: Pink Castle Avenue, Castine.
DODGE HEATING COMPANY: 1893 Pyramid Street, Pemaquid.
JIGGS & JIGGS OIL FUELS: 656 Dryen Road, Easton.
A. JOHNSON & SON: 5 George Street, Watertown
KALON HEATING SERVICE: 3800 Payson Avenue, Belmont.
C. R. KNAPP, INC.: 4709 Trocarro Point Road, Newton.
WM. O'BRIEN HEATING SERVICE: Introfaint Street, Newton.
SLOCUM & RAYMOND, INC.: 1097 Salmon Street, Portland.
JOHN TAYLOR HEAT SERVICE: 123 Greyhound Road, Rye.
WALTER BELMONT, INC.: 24 Hill Avenue, Easton.
V. J. WALSH & SONS: 182 Weston Road, Banbury.
ANY OF THE ABOVENAMED Firms or Companies will give you an official copy of the TECHNICAL STANDARDS AND CODE: Oil Heat Institute of New England. Be sure to see what these exacting Standards really mean to you!
OIL HEAT INSTITUTE OF NEW ENGLAND
CHAPTER: OIL HEAT INSTITUTE OF AMERICA
Symbol of Reliability

Newspaper *ads for Oil Heat Institute of New England campaign.*

A second ad of the same size will be run on a cooperative basis, and carry the names of the Accredited Members in the area, and urge the public to get and read a copy of the Technical Standard and Code to which they have subscribed.

The Standard and Code has eight points: (1) Each Accredited Member shall have a regularly established place of business, actively engaged in installation, service or fueling oilheating equipment; (2) Shall have trained technicians (3) either OHI or factory trained; (4) Shall give 24 hour service throughout the heating season, and (5) stock authorized parts for repair and service; (6) Shall be scrupulous in delivering the exact grade and quantity of oil represented; (7) shall conform to fair and ethical trade practices in good faith, and (8) comply with all State and local regulations and obtain all necessary permits for each installation.

Not yet ready is a pamphlet for public distribution by the members to sell the desirability of the program. Meetings have been held during the first half of September in most marketing areas of New England and the program is under way. At these meetings it was predicted that competition in the oilheating business would be severe within a year, and some means by which the public could select the most reliable dealers has become necessary.

◈

Henry Furnace Co., Medina, Ohio. Six-page, gate-folded folder illustrates and describes mechanical details of series P Moncrief oilfired winter conditioner. Large, revealing photographs are employed to show construction features of the unit, including a view of the unit with side and front panels removed. Photographs also show an automatic submerged arc welding unit on which heating elements are welded. Dimensions and specifications are given in tables on the back page.

Warren Webster & Co., Camden, N. J. Bulletin B 1500 C is a comprehensive discussion of the Webster system radiation, complete with details of various types and features. Information on selection of proper sizes and specification data are listed separately. Includes design and installation data for five types of convector radiators.

Industry Groups

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Groups' activities to reach the editor by the 20th.

OHI Distribution Division Offers Promotion Pieces

A NEW SERVICE for exclusive use of members of the Distribution Division of the Oil-Heat Institute of America has been announced by A. E. Whitehill, National Secretary of the Distribution Division. OHI headquarters has mailed to its dealer and distributor members in the field four promotional pieces which are described as "the opening series in a new service for exclusive use of OHI members."

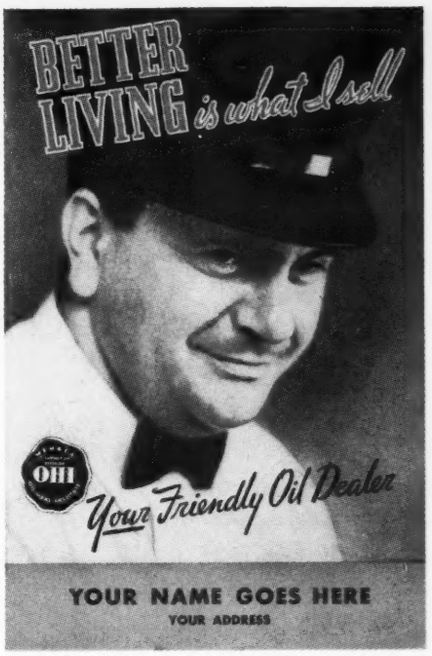
Mr. Whitehill states further in his bulletin, "Your use of this material with your name imprinted, together with the OHI seal, is but one more evidence of your serious purpose to impress upon the public, your prospects and customers, that the members of your local OHI Association can be relied upon to give the public a square deal.

"The three small envelope enclosures entitled, 'We Improve Home Heating Plants That Are "OK" Now!', 'It's Real Money For You,' and 'We'll Stretch Your Heating Dollars,' are particularly timely today to assist you in developing replacement business when new installations are restricted in varying degrees in different sections of the country. They should be part of your campaign to increase burner efficiency.

"The larger booklet, 'Better Living Is What I Sell,' contains good, strong institutional and promotional copy in behalf of oilheating as against substitute fuels. It is suitable for immediate use in many areas and for continuous use in paving the way against stiff competition in 1948—when the 'Battle of Fuels' will be raging."

He further states, "The broad use of these promotional booklets by all members will supplement the constantly increasing use of the OHI emblem decalcomanias on members' trucks, service equipment and display windows."

The advertising booklet and promotion material are similar to the material prepared for Coastal Oil Co., Newark, N. J., by Kirk B. Shivell, Inc., advertising, Ridgewood, N. J.



Discussing the current growth of the Distribution Division, Mr Whitehill states that in the past ninety days well over 100 dealers and distributors have become members of the Institute. He made particular mention of the new Chapter "Oil Heat Association of Maryland," with headquarters at Baltimore. This new Association, starting off with something over thirty members, held its first regular meeting on September 23, at which time the Association was formally welcomed as a member of OHI.

Another indication of the increasing interest in the Distribution Division is the fact that in the York, Harrisburg and Lancaster areas of Pennsylvania approximately fifty dealers and distributors are in the process of developing a local OHI Association which, it is expected, will become a going organization within the next sixty days.

Baltimore Association Joins OHI Distribution Division

OIL HEAT ASSOCIATION of Maryland, Baltimore, was installed as a chapter member of the Distribution Division of Oil Heat Institute at a luncheon meeting, September 23. Forty men representing member companies were present as A. E. Whitehill, secretary of the national division, presented the certificate of membership, and outlined the work and various programs of the organization. A. E. Coburn of FUELOIL & OIL HEAT spoke briefly on the business outlook for the immediate future.

Directors of OHI present at the meeting included W. F. Brannan, Charles R. Collins, H. W. Wilkinson and Mr. Coburn.

The meeting heard a report of progress in establishing a school for oilheating technicians by the Board of Education of the city. Quonset huts, insulated and lined with sheet aluminum have been erected from war surplus. Two 20 x 40 ft. huts form the shops and a smaller hut will house washroom facilities. Frederick P. Chelton, chairman of the School Committee, reported heavy registration for classes that will begin in the near future.

Fueloil Group Formed In N. Y. Oil Heating Association

THE FUEL OIL COUNCIL of the New York Oil Heating Association was formed at a September 17 meeting of a prominent group of fueloil dealers in Metropolitan New York. NYOHA membership includes many oilburner dealers and service organizations that have no immediate interest in the delivery of fueloil.

Membership in the Council is open to any reputable dealer in the area. Dues are based on the annual gallonage of light oil only, and Council dues automatically make the member a member in good standing of the parent association.

A platform of several items has been adopted, all aimed at the betterment of the industry and the dealers involved.

Norris R. Skaggs has been elected chairman of the new division, with an executive committee consisting of Matthew H. Conviser, Joseph Reiss and Harry Bloomberg. New officers will be elected at the end of the year. Philip Schepp, executive secretary of NYOHA will serve in the same capacity for the Fuel Oil Council.

Aluminum Tanks Get OK From Massachusetts

ALUMINUM STORAGE TANKS of not more than 285 gallons capacity have been approved for use in Massachusetts by the State Fire Marshal, providing that the metal is at least 12 gauge in thickness. One Massachusetts company is reported to be in position to produce such tanks in a volume of about 2,000 a month.

Following a hearing held September 4, as a result of a petition of the Oil Heat Institute of New England, the State Fire Marshal issued the following statement:

"In accordance with the provisions of Rule 16 of the current Rules and Regu-

lations * * * I hereby approve the use of aluminum or aluminum alloy sheet of not less than twelve (12) U. S. gauge for the construction of tanks or containers of not over 285 gallons capacity for the keeping of light fueloil, provided that all outlets of such tanks or containers be fitted with aluminum or aluminum alloy bosses or flanges suitably welded or brazed into the tank or container."

A warning was issued against the use of caustic or caustic solutions in aluminum tanks, but discussion otherwise brought out that the tanks should be superior to steel, since they would not be attacked by sulphur in the oil, would be lighter to handle, and present a better appearance.

Philadelphia Group Starts Fall Dinner Meeting Program

ON SEPTEMBER 18 the Oil Heat and Oil Heat Dealer Divs., Electrical Association of Philadelphia, commenced its Fall program with a dinner meeting, the first of a series. The meeting was held in the Association dining room and featured a talk by Clyde G. Morrill, secretary, Atlantic Coast Oil Conference, New York City, who chose for his subject "The Current Supply and Price Situation in Fuel Oils."

Other dinner meetings during the Fall season will present qualified speakers on timely and interesting subjects.

IPA Council Schedules Chicago Annual Meeting

NATIONAL COUNCIL, Independent Petroleum Associations has scheduled its annual meeting for Chicago, November 12 and 13. Sessions will be held at the Continental Hotel, during which officers will be elected for the coming year. The Council's executive committee meets in October to prepare the agenda for the meeting and will distribute it in advance to the membership.

Twin City Petroleum Club Surveys Customer Services

A SURVEY, conducted by Twin City Petroleum Club, Minneapolis, Minn., analyzed oil company policies on pump-outs of fueloil tanks, emergency deliveries and oilburner service. According to H. F. Horning, Club secretary, reports from seventeen companies were received.

A breakdown of the returns on pumping out of customer's tanks shows that one company renders no pump-out service, three companies give free pump-outs, one company furnishes the service free to regular customers, but charges others $1.50 and twelve companies make charges ranging from $2.00 to $5.00 per pump-out.

Reporting companies revealed that three of them make no emergency deliveries, that ten make no charge for such deliveries, one charges $1.50 and three charge $2.00.

On oilburner service, one company reported it cleans screens free, two reported they render free oilburner service if they are at fault, seven companies offer no service at all and six companies charge for oilburner service ranging from a $1.50 flat charge, from $3.00 to $5.00 for the first hour and from $1.50 to $4.00 for each hour thereafter.

State Wide Meeting Held At Pendleton, Ore.

A STATE WIDE MEETING, sponsored by Oregon Fuel Merchants Association, Portland, Ore., was held October 4 at

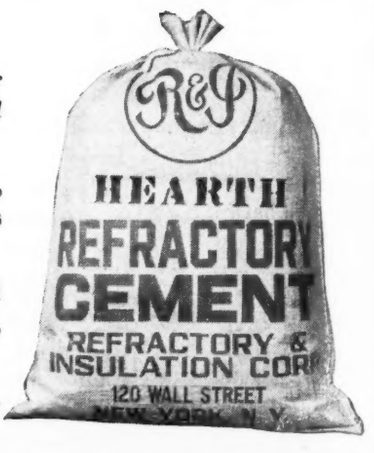
Make Your Hearths With the *Original* R & I Hearth Cement

You can be sure you're using the right cement to make your rotary hearth when you use R&I Hearth Cement, the *original* castable refractory.

Since it was introduced on the market over 19 years ago, oil burner men have poured thousands and thousands of hearths made of this cement. Many are still in service.

To use, simply mix with water and pour over the sheet metal hearth plate of rotary burners. A quick troweling gives it a smooth, hard surface that is extremely rugged.

Get it from your supply house. Write us for Bulletin OB-99.



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NEW YORK 5, N. Y. 116 WALL STREET
Chicago 4, Ill. Newark 2, N. J. Philadelphia 3, Pa.

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THE MOST COMPLETE LINE
of Heating Service Instruments

The instruments shown here are available individually as well as in kits containing instrument assortments now being used effectively by thousands of successful heating contractors for sales and service. These kits and the individual instruments are described in Bulletin 729. For free copy of it, fill in coupon below, paste on penny postcard, and mail.

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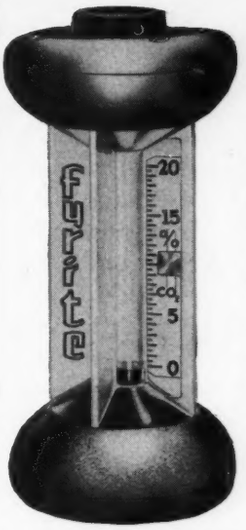
Sold by Leading Wholesalers of Heating Equipment

BACHARACH Industrial Instrument Company
7000 Bennett Street - Pittsburgh 8, Pa.



FYRITE CO_2 INDICATOR

Outstanding for simplicity and convenience of use. Nothing tricky or complicated about a CO_2 test with the FYRITE. Requires no skill or special training. Accurate within ½ of 1% CO_2. A CO_2 check-up with it requires less than a minute. The instrument, as received, is ready for use. Comes complete with sampling tube, filter, aspirator bulb, and rubber tubing.

POCKET STYLE DRAFT GAUGE

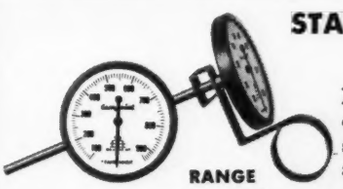
Compact, simple, inexpensive. Ready for use the moment it is taken from its case. Can be slipped into pocket and thus is always ready for a quick check of draft conditions. Especially suitable for use on oil-burning space heaters employing natural draft system.

ALL-PURPOSE DRAFT GAUGE

Can be located any distance from test point, and left connected for any length of time to obtain continuous reading of draft while making adjustment. Easy to read accurately even in dim light. Accuracy does not depend upon careful leveling. Has free movement of pointer at zero to indicate "puff-backs."

AIR TEMPERATURE RECORDER

Indispensable for recording new installation performance, balancing heating systems of every kind, and trouble-shooting on service calls. Saves service time, promotes customer good will, shows need for repairs or modernization. Makes written record on easy-to-read chart, 4" in diameter.



STACK THERMOMETERS

All-Metal Type

Practically unbreakable because of its all-metal construction. As easy to read as a clock. Outstanding for quick thermal response. The slip-on handle protects hand from hot flue pipe.

Pocket Style

A high quality mercury-in-glass thermometer—range 100° to 950°F. Temperature-shock-resisting annealed glass provides greatest possible durability. Case doubles back as handle.

MOTOR OPERATION RECORDER

Records motor-on-and-off time, showing cycling frequency and total time of burner operation during test period. Any TEMPSCRIBE is convertible to either a temperature recorder of any desired range or to a motor operation recorder, simply by changing the door.

MAIL THIS COUPON TODAY!

Bacharach Industrial Instrument Co., 7000 Bennett St., Pgh. 8, Pa.

Send Bulletin 729 describing complete line of heating service instruments.

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☐ DEALER ☐ JOBBER ☐ MANUFACTURER

Pendleton, Ore. Featured speakers at the meeting were H. B. Keating, Shell Oil Co., San Francisco, who spoke on "Heating Oils and What To Do About Them"; Leith Abbott, Portland advertising agency executive, whose topic covered "What's Ahead in the Fuel Industry" and Ray S. Roberts, president, Great Western Fuel Co., Spokane, Wash., who acted as chairman of a Round Table on coal problems.

Included on the agenda were committee reports and an open discussion of current problems and practices.

First Fall Meeting Held By Wisconsin Association

AFTER SUSPENDING meetings for the Summer, Wisconsin Oil-Heat Association, Inc., Milwaukee 2, Wis., held its first Fall meeting on September 25. Regular monthly meetings will be held from now on, according to Walter J. Schroeder, president.

The group is urging all members to publicize in letterheads, advertising and circulars that they are members of the association and affiliated with Oil-Heat Institute of America, Inc. In addition, copies of "Oil Burner and Oil Storage Tank Installation Standards," as revised, are being offered to members.

Steel Boiler Institute Announces Fall Meeting

THE FALL MEETING of the Steel Boiler Institute, Inc., Philadelphia 10, Pa., will be held November 11 at the Chalfonte-Haddon Hall, Atlantic City, N. J.

OHI Committee Plans Largest Industry Show

THE OIL-HEAT INSTITUTE Exposition Committee met in Chicago on September 3, to formulate and approve plans for the Silver Anniversary Exposition and Convention of the oil burning and allied industries to be held in Chicago April 5-8, 1948. O.H.I. contracted for space for this whole industry show over a year ago with the Chicago Coliseum. In its first meeting the Committee approved plans for the Institute's largest exposition of products.

In a statement to the Committee A. E. Hess, managing director of Oil-Heat Institute, said: "We have contracted for more show space than any preceding year in order to accommodate the showing of a greater number of new products than in any preceding national exposition. Special emphasis will be given new products."

The O.H.I. Exposition Committee comprises R. S. Bohn, chairman, president of O.H.I.; J. A. Collins, chairman of O.H.I. Distribution Division; J. W. Owens, chairman of O.H.I. Accessory Division; W. A. Matheson, Rudolph Gustafson and C. R. Jonswold.

Petroleum Council Moves Offices

NEW HEADQUARTERS of the National Petroleum Council have been established in the Commonwealth Building, 1625 K St., N. W., Washington 6, D. C. Council offices were closed September 19 to permit moving and arranging the new quarters over the week-end.

Whitehill Addresses Albany Institute Session

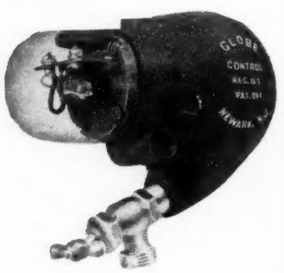
OIL HEAT INSTITUTE of Albany, N. Y. has resumed its monthly meetings in the DeWitt Clinton Hotel, Albany. The first session, over which president Harvey Wright presided, heard an address by A.

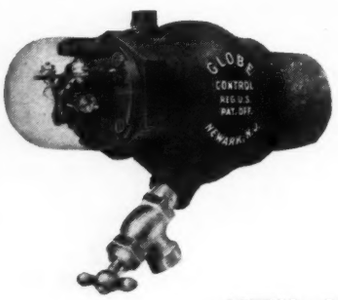
Globe "DEPENDABLE CONTROLS"

MERCURY TUBE CONTROLS to REGULATE BOILER WATER LEVEL—

Globe Low Water Cut-Offs are known to the trade for DEPENDABILITY — DURABILITY — ECONOMY.

FOR GAUGE GLASS MOUNTING
MODEL BP-10
LOW WATER CUT OFF





FOR IMMERSION MOUNTING
MODEL BP-S-10
LOW WATER CUT OFF

NEW, ADDED FEATURES

1. ***Larger float chamber—reenforced float and bellows assembly.***
2. ***Complete core casting—eliminating possibility of leaks.***
3. ***Combination gauge glass fitting with tapping for pressure control.***

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BOILER MANUFACTURER
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- **Light Weight**
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- **Attractive Appearance**
- **Easier to Install**
- **Saves Steel**
- **Underwriters' Approved**

new ABC **MODEL 51**

The oil burner you've been waiting for is almost here! Only 9 9/16" from front of Mounting Plate to rear of burner — perfectly adaptable to shorter vestibules. Unusual transformer mounting—just swing it aside for easy withdrawal of drawer assembly and breaking of connection between transformer and drawer assembly. TEN SECOND NOZZLE REMOVAL. Other features include exclusive ABC Oilairator, Peri-spin Turbulator and Governoil Nozzle. Will be available in three air delivery combinations from 0.6 GPH to 2.5 GPH. Find out how the Model 51 can help solve your production problems. *Write for complete details.*

ABC Oil Burners

AUTOMATIC BURNER CORPORATION

1823 CARROLL AVENUE • CHICAGO 12, ILLINOIS

fueloil & oil heat

L. Whitehill, national secretary, Distribution Div., Oil-Heat Institute of America, Inc., New York 16, N. Y., who discussed prospective fueloil supply, installation certificates and advertising programs.

OHI Directors Hold Regular Quarterly Meeting In Chicago

BOARD OF DIRECTORS, Oil-Heat Institute of America, Inc., New York 16, N. Y., convened in regular quarterly session on October 7, in Chicago. It was preceded on October 6 by meetings of the Accessory Division and the Show Committee, formulating plans for the Institute's Exposition which is scheduled to be held in Chicago, during the week of April 5, 1948.

AGA Annual Convention Held In Cleveland

THE 29TH ANNUAL CONVENTION, American Gas Association, held October 6 to 8 at Cleveland, Ohio, included morning and afternoon meetings on natural gas, accounting, home service, residential gas. Max W. Ball, director, Oil and Gas Div., U. S. Department of the Interior, spoke at one of the sessions on "Fuels for Today and Tomorrow."

NAMP Releases Date, Place Of 1948 Convention and Show

THE SIXTY SIXTH convention, and concurrent exposition of plumbing and heating materials, of National Association of Master Plumbers, Washington 5, D. C., will be held in Philadelphia Convention Hall, May 24 to 27, 1948. Official hotel during the week will be the Bellevue-Stratford, where meetings of the Women's Auxiliary will be held. NAMP sessions will be held in Convention Hall.

Housing Officials To Hold Building Products Exhibit

THE SECOND ANNUAL Exhibit of Building and Maintenance Products, being sponsored by the National Association of Housing Officials, Chicago 37, Ill., has been announced and will be held November 17 through 20 at the Hotel New Yorker, New York. Headquarters for the Association is reserving booth space now for exhibits on the mezzanine floor of the hotel.

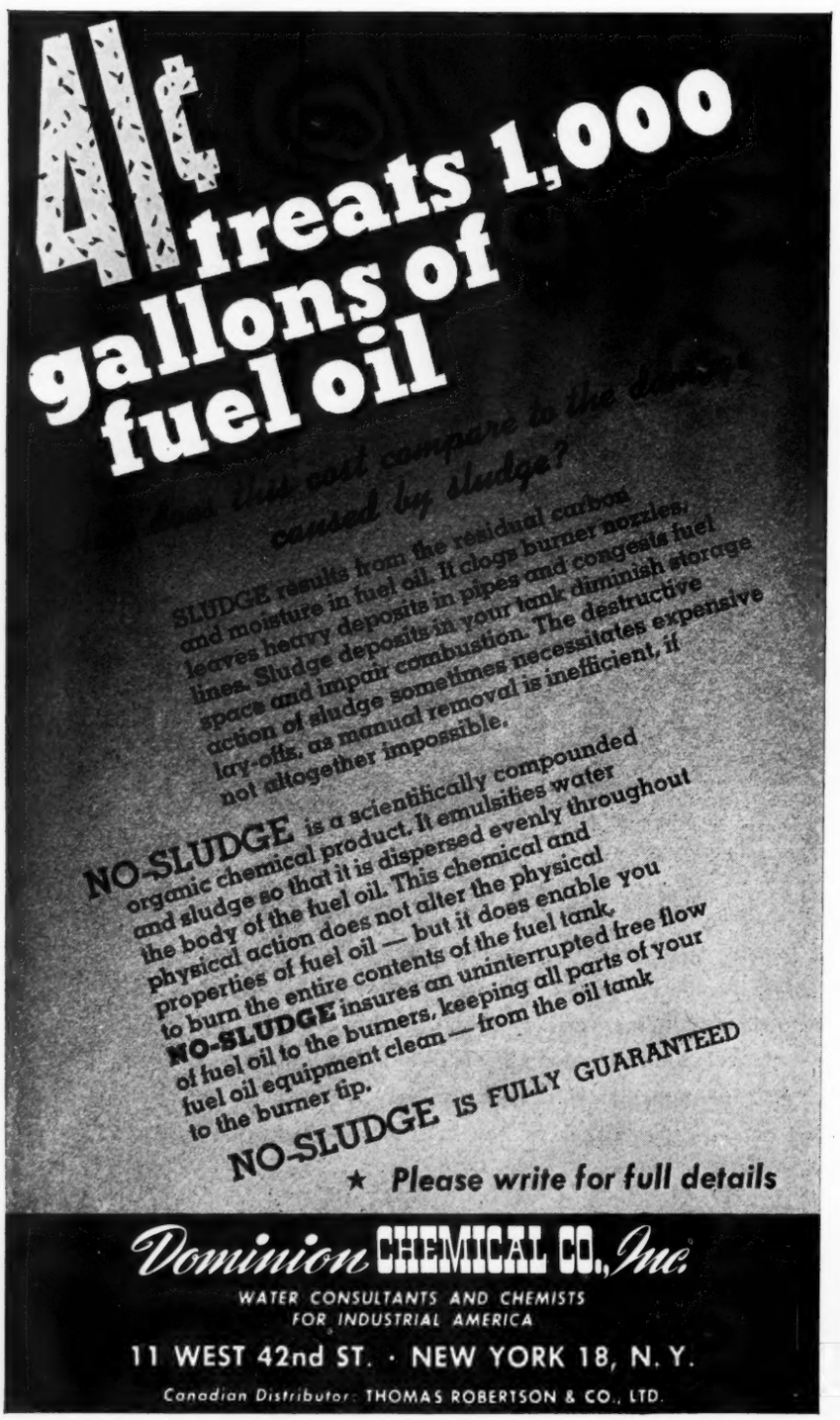
Follansbee for Caldwell At Burning Oil Distributors

VERNE S. FOLLANSBEE has been named executive secretary of the Burning Oil Distributors Association, Chicago, succeeding F. B. (Ted) Caldwell, who has resigned after thirteen years. Mr. Caldwell will remain for the next two or three months to complete some special work that he has started for the association.

Mr. Follansbee has been connected with a number of prominent industrial firms in sales, labor, industrial and public relations work. He was a U. S. Commissioner of Conciliation during the war. The change became effective October 1.

◈

Davisbilt Products Co., Cincinnati 3, Ohio. New catalog on the complete line of liquid transportation equipment offered. Pictures and describes, with comprehensive engineering data and specifications, numerous types of truck tanks, valve assemblies, bucket boxes, hose reels and other allied equipment.


41¢ treats 1,000 gallons of fuel oil
caused by sludge?
SLUDGE results from the residual carbon and moisture in fuel oil. It clogs burner nozzles, leaves heavy deposits in pipes and congests fuel lines. Sludge deposits in your tank diminish storage space and impair combustion. The destructive action of sludge sometimes necessitates expensive lay-offs, as manual removal is inefficient, if not altogether impossible.
NO-SLUDGE is a scientifically compounded organic chemical product. It emulsifies water and sludge so that it is dispersed evenly throughout the body of the fuel oil. This chemical and physical action does not alter the physical properties of fuel oil — but it does enable you to burn the entire contents of the fuel tank. NO-SLUDGE insures an uninterrupted free flow of fuel oil to the burners, keeping all parts of your fuel oil equipment clean — from the oil tank to the burner tip.
NO-SLUDGE IS FULLY GUARANTEED
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Dominion CHEMICAL CO., Inc.
WATER CONSULTANTS AND CHEMISTS FOR INDUSTRIAL AMERICA
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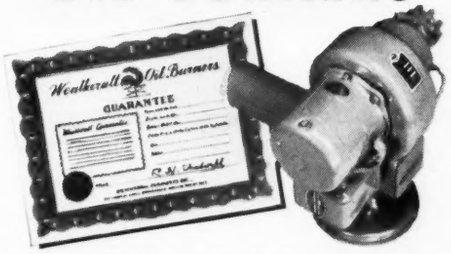
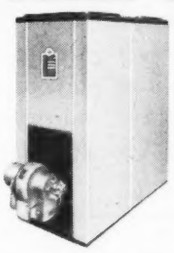
Weatherall OIL BURNERS



A complete line of domestic and industrial oil burners ranging in capacity from the 1 to 4 G.P.H. rating of the domestic Model AL shown above to the 25 to 35 G.P.H. rating of the largest industrial model made. All Weatherall Oil Burners are *performance guaranteed!* Weatherall Domestic Fuel Oil Burners are available with the Shell Combustion Head.

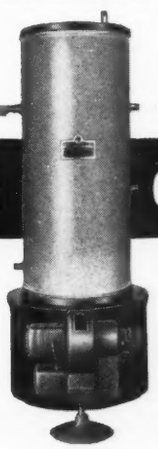
Weathertherm WARM AIR and BOILER BURNER UNITS



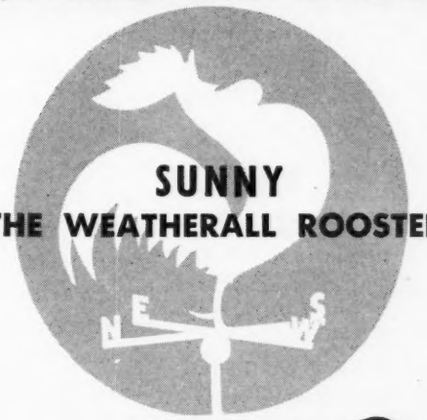
Complete package units designed and equipped to give maximum service at minimum cost.

Weathertherm COPPER OIL-FIRED Water Heating System

Made of long-enduring copper, this WEATHERTHERM unit is heavily insulated against stand-by heat loss, is equipped with pressure and temperature relief valve and is fired by a WEATHERALL MODEL AL OIL BURNER. A combustion control and aquastat are standard equipment.



Weatherall's



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The Early Bird THAT ALWAYS KEEPS 'EM WARM!

The famous Weatherall Rooster really gets around . . . on oil burners, on warm air units, on boiler burner units, on hot water heating systems . . . on a complete line of quality heating products!

The Weatherall Rooster on heating products signifies DEPENDABILITY to dealers, home owners, and industrialists alike!

Fuel oil dealers, heating contractors . . . contact us *NOW* for full information on Weatherall Heating products!

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Weatherall Engineers, INC.

387 CHARLES ST., PROVIDENCE, RHODE ISLAND

fuelOil & oil heat

Plugged Nozzles Are No Fun!

fueloil & oil heat
Short Short Article
on Burner Service

"A NOZZLE should stay clean after you service the burner!" an oil company owner complained to the man who answers the company's service calls. "When I was close to service work years ago, burner nozzles did not keep on plugging. Today, all I see on service slips is plugged nozzles, plugged nozzle, plugged nozzle. Call-backs to nurse nozzles are driving our service costs sky-high!"

When nozzle-plugging trouble seems to come in large doses, all the blame should not be placed on service men. Today's trend is towards lower-capacity nozzles for pressure burners, because smaller homes are being oilheated than in previous years. Also, small fires carry heavier loads today than in bygone years because efficiencies are higher now. Lower-capacity nozzles have greater tendency to plug. One burner dealer boasts that his high efficiencies, gained through many improvements including engineering to keep the burners running as steadily as feasible on coldest mornings, permit using 1.25 gph nozzles for houses formerly heated by 16 tons of coal a year. He admits he invites nozzle-plugging trouble by using nozzles of very low gph capacity.

The fueloil may be blamed by the service man for an epidemic of nozzle plugging trouble on a certain installation. Fueloils in general have been cleaner and more nearly free of sludge and sediment than they are today, well-informed service experts say, or else the oil storage tanks still contain some of the wartime oil which was blamed for greatly increased trouble with strainers, fuel units, and nozzles. Luckily, certain steps can be taken to determine if inferior No. 2 oil is causing frequent nozzle plugging.

Here is a step-by-step plan to cope with troublesome nozzle plugging. Take only the first step, if you believe it will end the trouble. If you are determined to end the trouble at once so that there will be no call-backs which can be blamed on poor service work, take additional steps. In all common sense, a service man cannot be blamed for plugging that follows taking all of the four steps listed below, although he can be blamed for simply cleaning and re-installing the same nozzle every time it plugs.

Step 1. When you find the nozzle plugged, replace it and also replace the nozzle strainer. Install a nozzle and strainer which are new or which have been cleaned in the shop so thoroughly that you are dead-certain they are just as clean as new. This avoids putting back in the burner a half-clean nozzle and strainer. Experienced service men know the "why" of this. After working on a burner, a man's hands are seldom spotlessly clean for handling the delicate inside parts of a nozzle. To make a nozzle and nozzle strainer as clean as new on the job is practically impossible.

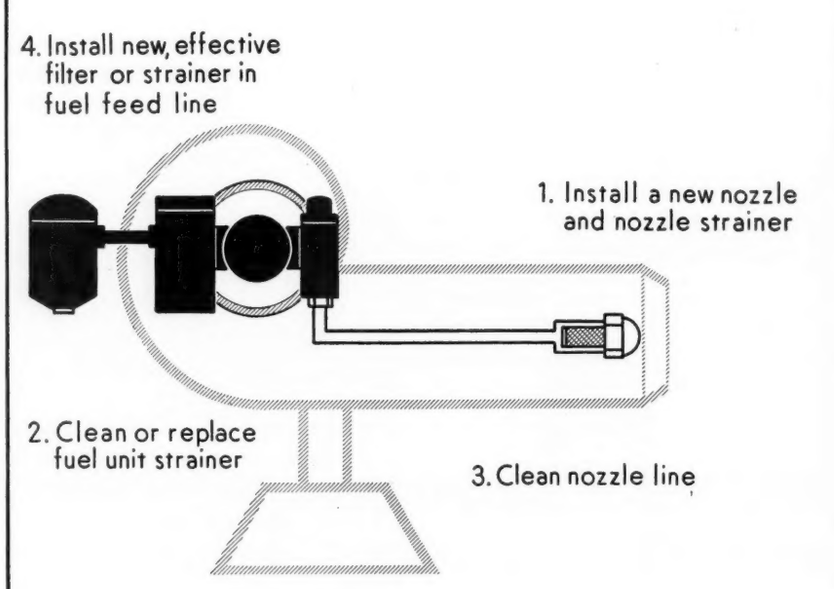
Step 2. Clean or replace the fuel unit strainer. Replacement is far better, using a new strainer element or a shop-cleaned element absolutely as clean as new. Halfway cleaning of a strainer on the job often loosens sediment and sludge which will plug the nozzle later, thus is an important cause of call-backs.

Step 3. If the burner has been in use a number of years, the line from the fuel unit to the nozzle may be found to be coated thickly with sludge. It may help a bit to flush oil through the line swiftly using the pump on the burner. To be thorough, however, clean the line by drawing a clean piece of cloth through it. Fasten the cloth to a wire, draw the wire through the line, then pull the cloth through. Follow the procedure used for cleaning a gun barrel.

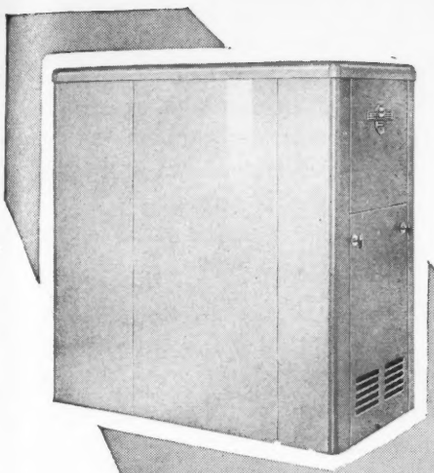
Step 5. Install in the burner feed line the most effective strainer or filter, engineered for this application, which you find it possible to obtain. The best strainers and filters are extremely valuable for minimizing nozzle plugging.

Where lowest-capacity nozzles persist in plugging, try to use less than 100 lbs. atomizing pressure (70 lbs. often works out well) and switch to a nozzle of the next higher gph rating.

What to do for frequent nozzle plugging?


4. Install new, effective filter or strainer in fuel feed line
1. Install a new nozzle and nozzle strainer
2. Clean or replace fuel unit strainer
3. Clean nozzle line

For low gph installations, reduce atomizing pressure to about 70 lbs. and switch to a nozzle of the next higher gph rating. Use a pressure gauge when doing this.

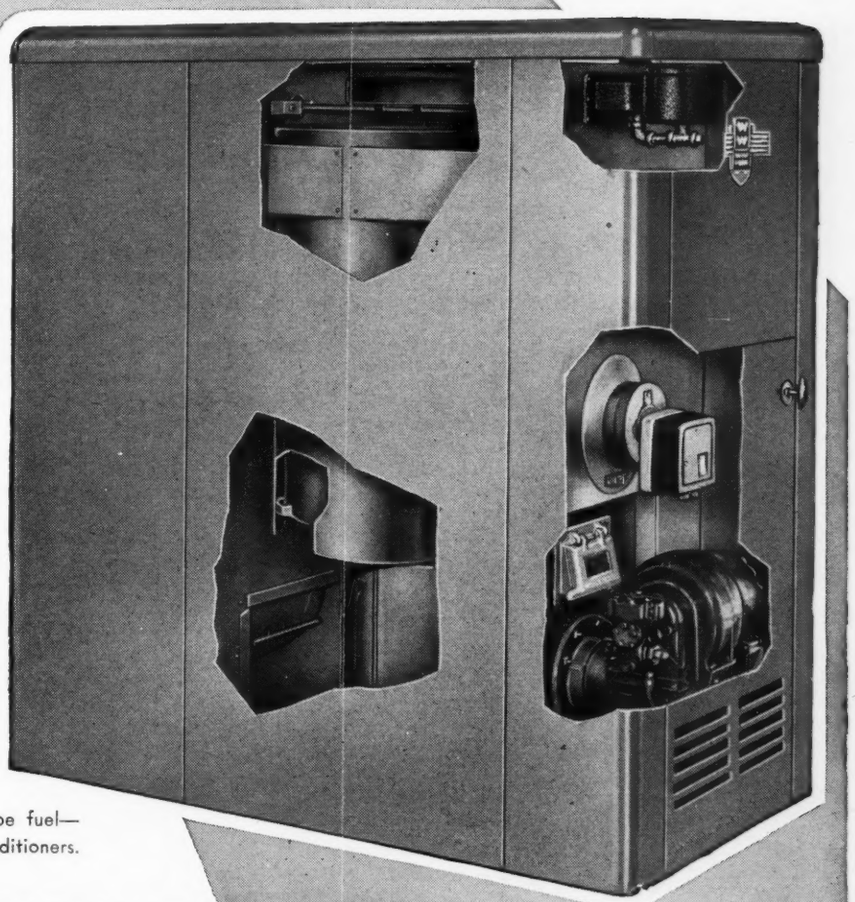


Waterbury

Oil Fired Air Conditioner

Whether you are installing a simple gravity job or the most complete air conditioner, it's what's under the casing that counts for your customer's satisfaction — and for a trouble-free sale for you.

It's What's Under the Casing that Counts!



A modern, compact, attractive unit, economical to buy—economical to operate. It is enclosed in an eye-appealing casing that is a compliment to the most modern basement—but what is equally important to you—because of the efficiency and quality of what is UNDER that casing, you are saved annoying service calls.

Furnaces for every size home and every type fuel—from gravity models to complete air conditioners.

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fueloil & oil heat

Manufacturers Activities

Enlarge Production Facilities For Quality Water Circulators

QUALITY SPECIALTY CO., Philadelphia 47, Pa., has announced occupancy of larger quarters to permit increased production of hot water circulators.

The company reveals also that it is using General Electric and Westinghouse electric motors exclusively on the four models being manufactured.

Gates Associates Named By Klemm Oil Filters

APPOINTMENT of C. W. Gates & Associates, Baldwin, Kan., as midwestern representatives has been announced by Klemm Automotive Products Co., Chicago, Ill. The Gates organization will handle the sale of Klemm fueloil filters and other products in Iowa, Kansas, Missouri and Nebraska.

G.E. Motor Output At New High; Few Types Short

PRODUCTION of fractional horsepower motors has been boosted to an all-time high at General Electric through a standardization program coupled with increased manufacturing facilities, according to A. W. Bartling, manager of the division. Supply has not yet caught up with demand for certain types, he says.

Bartling attributed a considerable share of his company's over-all gains in small motor production to an industry-wide fractional horsepower motor standardization program, on which G. E. has cooperated with the National Electrical Manufacturers' Association.

"Through this program, we have reduced the number of different kinds of motors being manufactured at one time from more than 25,000 to less than 4,000," Bartling said.

"As recently as two years ago it would have been mathematically possible to order motors from our handbooks with as many as 185 billion variations. Such an astronomical number of differences is obviously unnecessary."

Benefits of the standardization program, in addition to facilitating increased production, are greatly in favor of manufacturers who use motors in their products, as well as the ultimate purchasers of those motor-equipped products, and will make the more popular motor models readily available.

Dole Valve Designates Four Representatives

DOLE VALVE CO., Chicago 12, Ill., has appointed Ward R. McGavren Co., Oklahoma City 7, Okla.; O. H. Howell Mfgrs. Agent, Inc., Tampa 2, Fla.; Southern Heater Co., Inc., New Orleans 13, La.; and Bryant Gas Htg. Co., Inc., Omaha, Neb., as representatives. The companies will be concerned with sales of Dole air valves, vacuum valves, water mixers and special products.

General Bronze Building Long Island Factory

A PLANT, being constructed at Garden City, Long Island, N. Y. by General Bronze Corp., Long Island City, N. Y., will be devoted to the manufacture of architectural bronze and aluminum win-

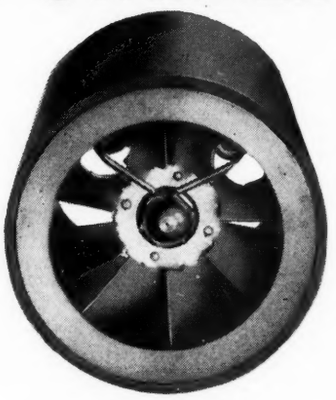
New, Proven SANBORN AIR SWIRLER

SAVES UP TO 20% ON FUEL OIL COST

By raising CO_2 up to 14½%

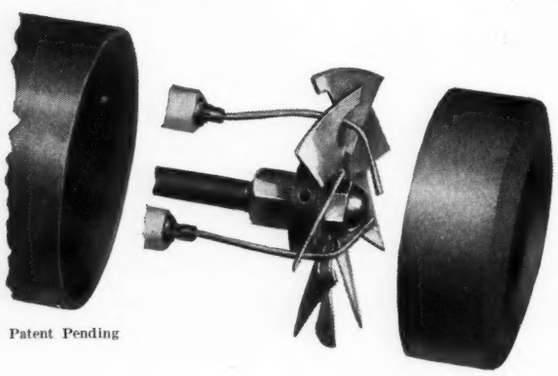
INEXPENSIVE — PAYS FOR ITSELF IN A FEW MONTHS

It scientifically and thoroughly mixes air with atomized oil, to produce perfect carburetion and complete combustion. Thus excess air, partly burned combustion gases and high stack temperatures are controlled and reduced to a minimum.



EXCELLENT RESULTS

- Does not reduce burner capacity
- Reduces high stack temperatures
- Raises firebox temperatures 300 to 500 degrees
- Cleans nozzle face



Patent Pending

SMOOTH PERFORMANCE

Eliminates

- Starting puffs
- Flame pulsation
- Nozzle baking
- Excess air
- Firebox soot

EASY TO INSTALL

- Nothing to adjust
- Requires only minor changes
- No moving parts
- Fits any gun type burner
- No special tools required
- Guaranteed

Immediate Delivery

Exclusive territories available for established distributors — Investigate Now!

SANBORN SYSTEMS, INC.

4975 N. Santa Monica Blvd. Milwaukee 11, Wis.

a complete line for the industry
A genuine interest in the problems of the heating industry has made possible the completeness of Taco's line.
Taco engineers, in the field and in the laboratory, have been helping heating contractors meet their problems for more than a quarter of a century. The solution often resulted in the design of a new Taco hot water heater or hot water heating specialty. Many times, a new and better method of installation was the answer.
See the completeness of Taco's line for yourself. Send for the new condensed Taco catalogue No. E 99.
Taco
TACO HEATERS INCORPORATED
342 MADISON AVENUE, NEW YORK 17

dows. Three of the largest boilers manufactured by Pacific Steel Boiler Div., United States Radiator Corp., Detroit, Mich., rated at 50,000 sq. ft. of direct steam radiation each, will be installed in the factory.

Ford Displays 1948 Line Of Trucks For Managers

DISTRICT TRUCK and fleet managers from the thirty-three districts, Ford Motor Co., gathered on September 15 in Dearborn, Mich. for a week-long meeting, during which they were shown the new 1948 line of Ford trucks. They received sales and merchandising data and witnessed performance tests on the trucks. The managers will arrange to hold dealer meetings during November in their own regions and districts.

Char-Gale Announces Aluminum Price Reductions

PROMISING immediate shipment of any quantity, an announcement circulated by Char-Gale Mfg. Co., Minneapolis, Minn., announces further price reductions on sheets and 100 lbs. coils of aluminum. The new reductions became effective August 10, for aluminum of .025 thickness in rolls, 12 in., 14 in., 17 in., 24 in., 26 in., 30 in., 33 in. and 36 in. and sheets, 24 in., 30 in., 33 in., 36 in. wide.

Kresky Resumes Production After Fire Loss At Plant

ON AUGUST 22, Kresky Mfg. Co., Inc., Petaluma, Cal., suffered a total loss by fire of its Plant No. 1. In announcing that the company had resumed full production, A. J. Matot, vice president, explained that production was retarded only ten days because Plant No. 2, with new and enlarged facilities, was more than two thirds in operation, and was able to absorb activity to offset the loss.

United States Radiator Holds Annual Sales Conference

THE 1947 ANNUAL sales conference, United States Radiator Corp., Detroit, Mich., was held at Fort Shelby Hotel September 15 through 19. V. W. Blackney, assistant general sales manager, in a preliminary announcement, revealed that new products, designed to fit into low cost housing programs, would be shown for the first time. An aggressive merchandising plan also was advanced at the conference, which was attended by all sales personnel from the twenty-five United States Radiator branch offices.

Hold Meeting for Coleman Central Pennsylvania Dealers

ON AUGUST 20 more than four hundred and fifty dealers and their sales, service and installation personnel, attended a meeting conducted by Coleman Co., Inc., Wichita 1, Kan. and its central Pennsylvania distributor, Jules Alexandre, Inc., Harrisburg, Pa. Ralph W. Carney, Coleman's vice president and general sales manager, presented the company's line of heating equipment after a dinner, held in the Penn Harris Hotel, Harrisburg. Dealers and personnel came from the twenty-five county area served by Alexandre to attend the meeting, which was the first of a series being planned to prepare for the keener competition expected.

Also in attendance from Coleman Co. were: L. L. White, manager, eastern branch; Ralph L. Barnes, district sales

Use VITROLINER

"THE PROVEN PRODUCT"

for Protecting and Correcting

CHIMNEYS

Here is the superior Liner for oil heating plants! Removes the chimney problems:—Eliminates condensation—Improves draft—Makes possible easy adjustment for efficient operation—Corrects defective lining, smoke back and leaky brick joints.

VITROLINER is made of heavy gauge steel completely coated inside and out with acid resisting porcelain fused into the steel at 1575° F. to prevent corrosion.

Dealers—You can quickly build up a profitable business lining masonry chimneys with VITROLINER—for the highest quality job. Vitroliner is also the ideal replacement flue pipe.

VITROLINER has been used for the past 18 years and is proven through a long field record.

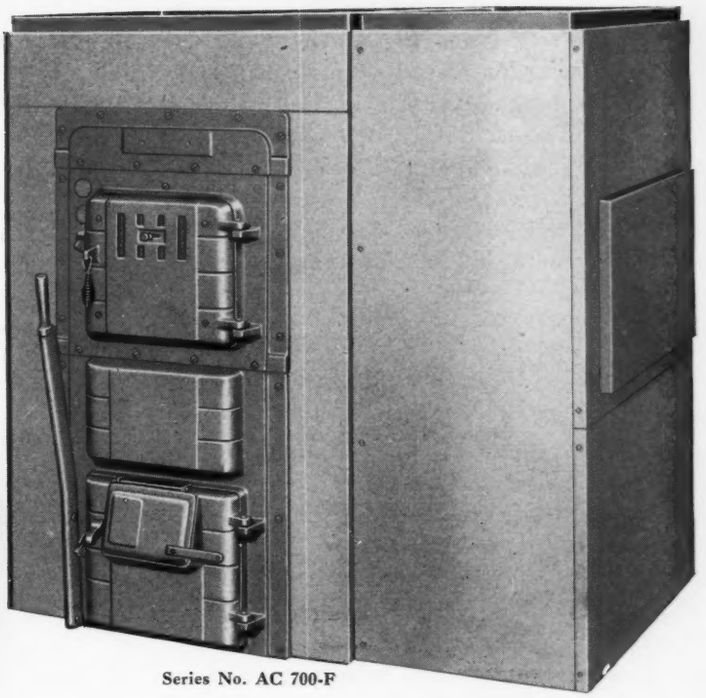
Write today for catalog and price list No. 14-E.

CONDENSATION ENGINEERING CORPORATION

122 S. Michigan Ave. Chicago 3, Ill.

Mfrs. of Vitroliner and Underwriters approved Type "E" complete Flue.

MONCRIEF'S *New* All Fuels AIR CONDITIONING UNIT



Series No. AC 700-F

A Coal Fired Unit, Easily Converted Well Adapted—for Gas, Oil or Stoker

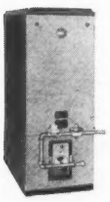
Moncrief's new, compact, all fuels Air Conditioning Unit is one of the easiest merchandising, greatest sales-getting units ever offered to the heating trade. Here's a unit that solves your fuels restrictions or regulations—a unit that "lets-you-in" on any heating job.

Advanced cabinet design and construction allow the full height blower compartment to be assembled at either the right or left side of heating compartment.

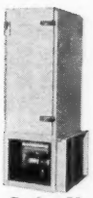
The long fire travel and large heating surface of the rugged, gas-tight, steel heating element make this unit easily adaptable for oil, gas or stoker firing.

Abundant circulation of filtered air is assured by the large, quiet operating blower, with rubber insulated motor. Large area filters provide a long period of effective air cleaning . . . an automatic humidifier is standard equipment.

Series L
Gas Fired, Steel
Air Conditioning Unit

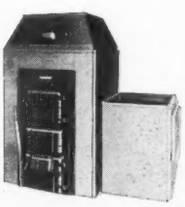


Series W
Gas Fired, Steel
Gravity Furnace

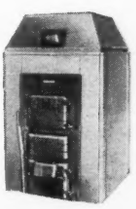


Series U
Gas Fired, Steel
Utility Air Conditioning Unit

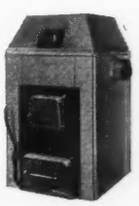
Series P
Oil Fired, Steel
Air Conditioning Unit



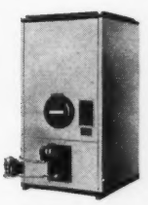
Series AC-700
Coal-Fired, Steel
Air Conditioning Unit



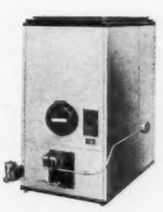
Series 700
Coal-Fired, Steel
Gravity Furnace



Series C
Coal-Fired, Cast
Gravity Furnace



Series VW
Oil Fired, Steel
Gravity Furnace



Series VL
Oil Fired, Steel
Air Conditioning Unit

Series VU
Oil Fired, Steel Utility
Air Conditioning Unit

THE HENRY FURNACE COMPANY

Medina, Ohio

HEATING AND AIR CONDITIONING UNITS — MONCRIEF SINCE 1895 — FURNACE PIPE AND FITTINGS

fueloil & oil heat

manager, eastern branch; Jess L. Moore, district representative and P. W. De-Godd, assistant to Mr. Carney. Personnel from Jules Alexandre, Inc., in attendance, included president Jules E. Alexandre, assistant sales manager H. Frank Hitchcock, installation manager Homer Stahle, Jr., secretary Ben Eby, treasurer Otto Hepner and nine sales department representatives.

Calimode Appoints Four Southern Distributors

FOUR DISTRIBUTORS were named recently by Calimode, Inc., Atlanta, Ga., manufacturers of oilfired space heaters and floor furnaces. Yancey Co., Atlanta, will act as distributor for the state of Georgia; Southeastern Wholesale Furniture Co., Birmingham, will cover Alabama; Radio and Appliance Co., Nashville, will function in central Tennessee and Heatcraft Co., Louisville, will serve Kentucky and adjoining southern parts of Indiana and Illinois.

Swiss Subsidiary Formed By Minneapolis-Honeywell

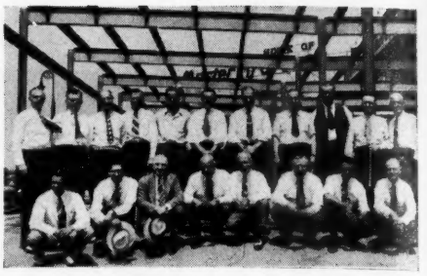
HONEYWELL A. G., Zurich, Switzerland, has been organized and started operations, supplementing other foreign subsidiaries in England, Sweden, Holland, Belgium and Mexico conducted by Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.

Intensified interest in automatic heating, and growing industrial activity, prompted establishment of the branch. Charles B. Meech has been transferred to Zurich as manager and will be assisted by Leo deBruyn, a member of Honeywell's international division.

Two Year Guarantee For Super Transformers

AN UNCONDITIONAL guarantee against defects in workmanship and materials for two years, covering its oilburner transformers, is now offered by Super Electric Products Corp., Jersey City, N. J. Don Cush, vice president in charge of sales, in making the announcement revealed that it is in addition to the guarantee recently announced against radio interference.

Another special service for Super customers is a policy of making a variety of bases for standard and custom specifications of burner manufacturers.



Master Kraft *oilburner sales executives and field men for eastern United States shown as they visited the factory of Harvey-Whipple, Inc., Springfield 1, Mass., for the annual sales conference held during the first week in August. They are standing in the partially completed factory addition where moving link-belt production lines will turn out new compact boiler and warm air units.*

Consumer Magazines Used For Iron Fireman Advertising

ADVERTISING placed during the months of August, September and October by Iron Fireman Mfg. Co., Cleveland 11, Ohio in consumer magazines in United States and Canada reached a total audience of more than 10,750,000. *Time, Saturday*

A "conversion" burner you can install with pride and profit.

The JOHNSON Pressure-Type, Automatic

BANKHEAT BURNER

The Bankheat Burner is an ideal "conversion" unit! No other single burner has been so widely used or so enthusiastically acclaimed for so many years.

Heating Engineers like it for its fine engineering and its amazing efficiency. Home owners tell about its fuel economy . . . its quietness . . . and its ability to go on year after year delivering abundant heat with a minimum of servicing and attention.

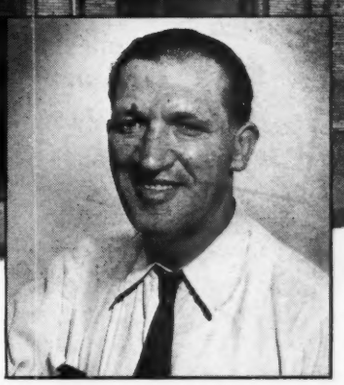
Dealers choose the Bankheat because it is so easy and so inexpensive to install. Labor costs don't eat up the profits on Bankheat "conversion" jobs.

The Bankheat is a Burner that will meet every demand you can place on it. If you don't already know what it can do, now is a good time to find out. Look up the nearest Johnson Dealer or write to us direct for facts and figures on the time-honored Bankheat.

There's a Johnson Oil Burner for every heating need

Johnson Oil Burners

S. T. JOHNSON CO.
940 Arlington Ave., Oakland 8, Calif.
401 No. Broad St., Philadelphia 8, Pa.



Huge showroom where Thatcher Heating Equipment is featured by General Heating Equipment Service Corp., Harry Weidner, Mgr., 363 N. High Street (directly across from the railroad station) Columbus, Ohio.

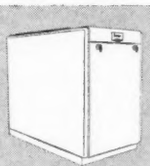
THATCHER scores high in COLUMBUS

Look What's Happening In Columbus! As in all other parts of the country, Thatcher proves outstanding. Harry Weidner, Manager of General Heating Equipment Service Corp., tells us, "Thatcher meets and overcomes the roughest kind of competition — the high quality of Thatcher's entire line enables me to do a real selling job".

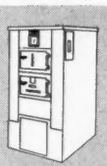
These Reasons Behind Thatcher's High Score In Columbus May Be the Key to New Profits In Your City.

1. Customers like Thatcher's rugged construction — economical, service-free operation.
2. People know and trust the name and reputation Thatcher's built as heating specialists for 97 years.
3. The way Thatcher cooperates with distributors and dealers can turn difficult jobs into smooth operations.
4. Thatcher's up-to-date line offers a solution to almost any residential heating problem.

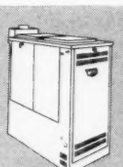
Remember — you recommend yourself when you recommend Thatcher — your warm friend since 1850.



Thatcher Comfortmaster Oil-fired Air Conditioner



Triple-Fire All-Purpose Boiler



GA Comfortmaster Air Conditioner

Thatcher Oilmaster Automatic Oil-fired Boiler

Thermaster Gravity Furnace

KEEP YOUR EYE ON THATCHER

Thatcher FURNACE COMPANY

Garwood, New Jersey

SPECIALISTS IN HEATING SINCE 1850

AMAZING FIELD PERFORMANCE
USING CATALYTIC OIL
80 to 88% OVERALL EFFICIENCY
10 to 14%+CO_2
INTENSE HEAT ~ NO SMOKE
BURNS THE CARBON
LOW STACK TEMPERATURE

If the Burners you are now selling do not equal this unusual efficiency performance they are "out of date fuel wasters," yes, and over-priced no matter how little they may cost you.

THE *Richfield* FLAME CONTROL
TURBULATOR HEAD BRINGS THE
4,000,000 REHABILITATION MARKET
TO YOUR FRONT DOOR

There is a he man job to be done in the interest of fuel economy for the 4,000,000 home-owners who own the 4,000,000 Oil Burners now in daily use. You can get your share of this year 'round business.

The burners now installed in your territory can be brought within the 80 to 88% Richfield overall efficiency range if you use your head, and, the **Richfield Head.**

FOR AVAILABLE FRANCHISE

We will be glad to hear from live dealers small or large. Just address us on your own stationery and your inquiry will have our immediate attention.

GEORGE BERNHARD, *Pres.*

RICHFIELD MANUFACTURING CORPORATION
21 West 19th Street, New York 11, N. Y.
Telephone CHelsea 3-1420
Thousands in use — Established 1936

Evening Post, American Home and *Better Homes and Gardens* were among the publications used.

Advertising featured "comfort with Iron Fireman heating," accompanied by illustrations of coal, gas and oilfired boiler and furnace units. A sixteen page booklet was offered free.

Chevrolet Advertising Campaign Aimed At Service And Parts

ONE OF THE GREATEST sales promotion campaigns ever launched was begun September 1 by Chevrolet Motor Div. and its 6,200 dealers. The campaign, which will end October 31, is aimed at obtaining new service customers and development of new wholesale parts customers. Each dealer has established quotas, with sales and service personnel earning points for prizes and awards. In addition to dealer efforts, millions of direct mail letters will be used, along with extensive dealer advertising.

Nu-Way Representatives For State Of Michigan

THE ENTIRE STATE of Michigan will be covered by Guardian Sales Co., Chesaning, Mich., as manufacturers' representatives for XL line of oilburners made by Nu-Way Corp., Rock Island, Ill., according to O. K. Gipple, Nu-Way's sales manager.

A. L. Swartzmiller and M. A. Davies are partners in the Guardian Sales Co., Mr. Swartzmiller with twenty years retail and manufacturing experience in the heating and plumbing business and Mr. Davies, new to the heating field, but active in the past in the automotive sales field.

Expansion Program To Increase Morrison Production Facilities

THE ADDITION of 50,000 sq. ft. of floor space to the Buffalo, N. Y. factory of Morrison Steel Products, Inc., is a major part of the building expansion program now under way which will materially increase production facilities. The new addition will increase factory floor space to a total of 210,000 sq. ft., will be of structural steel and cinder block production, connected to the present factory building. Included in the new facilities will be two 60 ft. bays to handle raw material, scrap and store dies, while a 40 ft. bay adjoining the present building will be used for cut stock.

(*Continued on page* 137)

Delayed Oil for Gun Burner

IN EXPERIMENTAL PROJECTS and special service work, important advantages are sometimes gained by running the motor and blower 20 or 30 seconds, on each start of the burner, before spraying oil from the nozzle. This delayed-oil feature can be provided easily for any pressure burner through use of standard oilburner parts and controls. The feature has eliminated starting pulsation, for example, where the chimney area was half enough for the gph rate. It gave smooth starting also where the boiler and chimney locations could not be changed and the smokepipe was 65 feet long. Where a fueloil preheater is being tried with a pressure burner, it may help to run the motor and oil pump 30 seconds before giving oil to the nozzle, as this permits the flame to light only after the temperatures in the oil-flow system have steadied. Earlier lighting may give trouble related to slugs of very hot fueloil, or oil gas from hot fueloil, passing through the pump or the nozzle.

A dozen layouts of oil valves and controls can be used to give a pressure burner the delayed-oil feature. For example, you can pipe a solenoid valve from the output side of the oil pump to the return line and use a time-delay device to keep the valve open until you want oil from the nozzle. While open, the valve prevents the pump from developing pressure, thus keeps closed the burner's regular shut-off valve. Pipe the solenoid valve back to the suction line strainer, instead of to the return line, if you prefer.

The accompanying diagram shows another arrangement. Here, an oil-delay was used to end ignition-delay caused by voltage drop. When the one-third horsepower motor on this burner started, it drew enough current to drop the voltage at the burner. Because of the low voltage, the ignition transformer gave no spark. The motor took about three seconds laboring up to half speed. Oil sprayed from the nozzle before the motor was fully up to speed, while the transformer gave no spark or a spark too weak to light the oil. With the motor finally running at normal speed and drawing its normal-speed current, (a fraction of its starting current) the ignition spark became strong and lit the oil. The ignition delay caused a loud "pop" on each start of the burner.

Told that his burner was starting violently because the electric feed lines of the building were overloaded, the owner checked with an electrical contractor. It developed that hundreds of feet of feed lines were involved; improving part of the

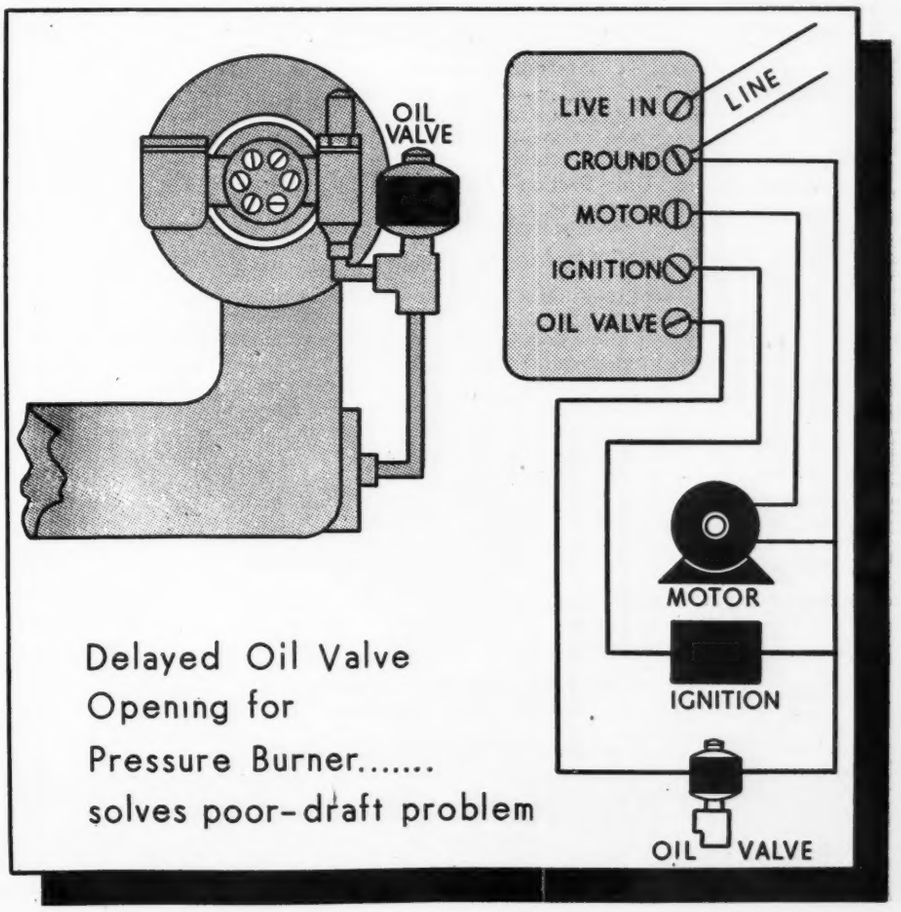
fueloil & oil heat Short Short Article on Burner Service

system called for extensive changes throughout. Improvements would cost more than a thousand dollars, as the minimum. The owner begged off. In one year, he said, the building would be put to a different use and an entirely new and different electric system would be installed, therefore any money spent now on feed lines would be wasted. But he had to use the burner for a year in the meantime, he found the starting "pop" intolerable, and he would give his fueloil business to anyone who would end the burner trouble at reasonably low cost. Also, in a year he would need an oil-fired power plant for the renovated building.

This provided the incentive to design and install the control layout in the diagram. A solenoid oil valve suitable for 150 lbs. pressure was installed in the nozzle line. With no current passing through the coil of this valve, no oil can come from the nozzle. The old burner control panel was removed, and in its place was installed a panel of the type often used for horizontal rotary cup burners. This has connections for an oil valve, and includes a simple timer which causes the oil valve to open about 20 seconds after the burner motor is started. The oil valve timing is adjustable.

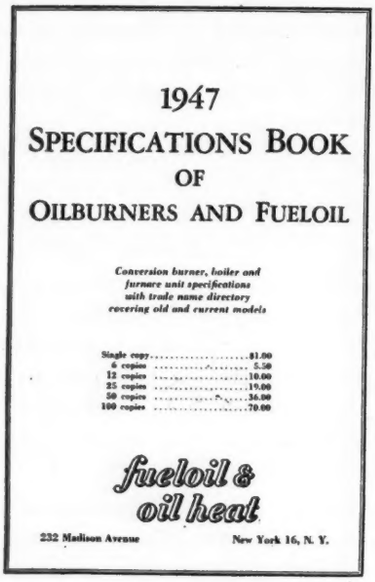
The new control panel and the oil valve were installed by one man in less than a day's time. The price of the job, which proved pleasing to the owner, came to less than one hundred dollars.

The starting of the burner is smooth and uneventful now. The stopping is also better, as the flow of oil to the nozzle is stopped instantly when the motor current is cut off, and this gives much sharper cut-off of oil at the nozzle than before.



Delayed Oil Valve Opening for Pressure Burner..... solves poor-draft problem

You've Been Waiting For This!



A NEW EDITION is now ready for immediate delivery. The last edition of this informative book appeared in 1942, and it has been compiled now to include all specifications and data from that edition, as well as specifications on current and new models introduced since then.

Sample page heading:

TRADE NAME	MODEL	CAPACITY (gph) A	CAPACITY (gph) B	ATOMIZATION	AIR SOURCE	IGNITION	OIL FEED	FUEL	MOTOR SIZE
...	...	...	7.5	atom. vert. rot.	bl. & nat. dr.	elec. gas	grav.	1,2,3	1/20
...	...	...	2	atom. vert. rot.	bl. & nat. dr.	elec. gas	grav.	1,2	1/20
...	...	...	...	high pres. atom.	blower	electric	pump	1,2,3	1/8,1/6
...	...	...	...	high pres. atom.	...	electric	pump	1,2,3	1/6
...	...	...	...	...	...	...	pump	1,2,3	1/4
...	...	...	...	...	...	...	...	3	1/8

THE BOOK is sectionalized and indexed for quick, easy reference, as follows:

Conversion Burner Section—Specifications for all types of conversion oilburners—pressure, vaporizing, rotary, etc.—are tabulated for more than 2400 models made by 559 manufacturers. Page heading shown illustrates type of information listed.

Boiler-Burner Unit Section—Gives trade names, model designations, minimum and maximum capacities in gph, type of oilburner used, whether cast-iron or steel boiler, and fuel used for more than 700 models of 174 manufacturers.

Furnace-Burner Unit Section—Furnishes data on trade names, model designations, capacities, type of oilburner, ignition and fuel used for more than 650 models listed for 191 manufacturers.

Trade Names Directory—Lists alphabetically almost 600 trade names for oilburners and units, showing company names, cities and states. It includes repeated listings from the 1942 edition, as well as current listings. Names repeated from the 1942 edition represent the best-known or last-known addresses, while listings for current models were taken from questionnaire returns.

Fueloil Specifications Section—Reproduces Commercial Standards for Fueloils, CS-12-40, effective January 5, 1940, currently being enforced. Listed for information and reference, when adopted, are changes to the Specifications as suggested by a Committee of the American Society for Testing Materials.

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116 pages, 100 pages containing specification tabulations.

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FUELOIL & OIL HEAT

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GENERAL FUEL OIL FILTERS

William J. Oebler and Sons
Automatic Heat Devices
PHILADELPHIA, NEWARK, BOSTON

EASTERN FACTORY REPRESENTATIVES
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STAINLESS STEEL NOZZLES
SERVICEMAN'S NOZZLE KITS
PRESSURE REGULATING VALVES
BRASS NOZZLE ADAPTERS
WIRE MESH STRAINERS
AIR CONES and STABILIZERS

Manufacturers Activities

(*Continued from page* 130)

An all-steel building, also under construction, will provide 7,200 sq. ft. dead storage area and other plans contemplate enlarged parking facilities for employees and large turn-around areas for truck-trailers. Plans have not been completed for a proposed warehouse addition.

Window Display Package Offered Dealers By Norge

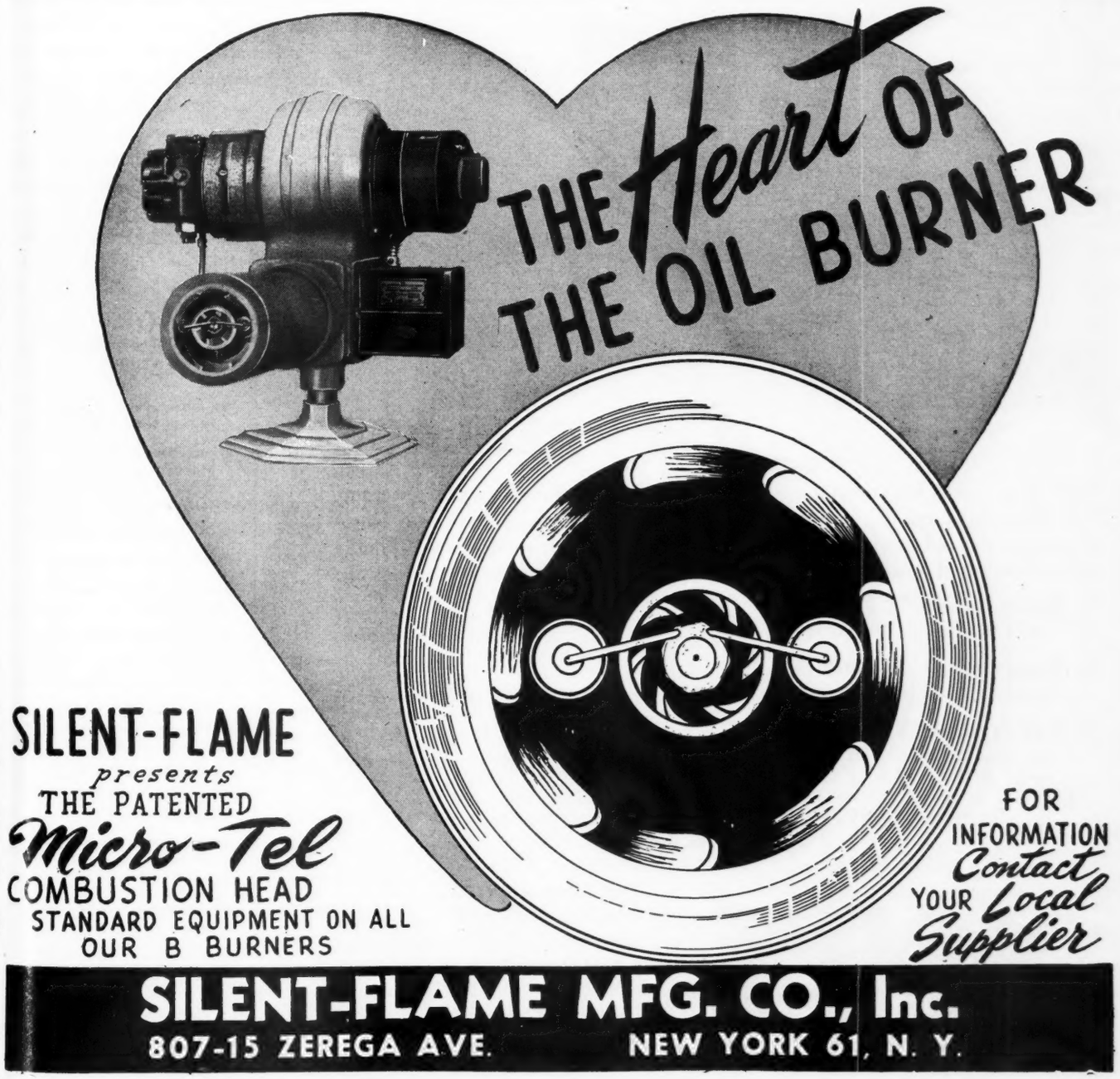
NORGE DIV., Borg-Warner Corp., Detroit 26, Mich., is offering to its retailers a complete window display package for the promotion of oilburning space heaters.

The display unit is one of five being used during the last half of the year, and, like the others, is offered at a time to coincide with national magazine advertising.

The L-shaped heating element of the heater and its metal casing are the principal figures in the display, which features also five balloons spelling out the name, Norge, and enumerating exclusive features. Easel supported figures and drawings complete the display package.

Hold Regional Meetings To Aid Airtemp Dealers

A SERIES OF one day regional heating meetings for Four Star Dealers, Airtemp Div., Chrysler Corp., Dayton 1, Ohio, opened in Boston on July 8 and concluded with a session at St. Louis on August 15. W. B. Shirley, director of heating sales for Airtemp, conducted the meetings, which were designed to aid the dealer in setting up a



successful heating sales organization. Pattern of the meetings included opening remarks by regional and divisional managers, with Mr. Shirley contributing addresses on equipment selling features, presentations and possibilities of the replacement and new home market. Other discussions included a dealer's forum and explanations of how to find, select and interview salesmen.

Two sound slide films were shown during each meeting. The first, "Doorway to a New Era," is the story of Chrysler Airtemp, its products and merchandising methods, while "It's a Doozy," shows the fundamentals of preparing to sell Airtemp products.

Dealers Report Business Better In M-H Survey

IN THREE WEEKS ending August 16 Minneapolis-Honeywell salesmen interviewed 1,382 oilheating dealers in 22 cities on general business conditions. Just half of the dealers reported that their retail business was "Improving," 5% said it was "Bad," and 26% called it "Slow." Nine percent believed they were overstocked on oilburners. In only three of the 22 cities did the majority of dealers believe that the threatened oil stringency was retarding oilburner sales . . . Toledo, St. Louis and Detroit. Comparisons with the last previous study made in June show:

	June	*August*
Business improving	42%	50%
Business bad	12	5
Business slow	39	26
Overstocked on burners	8	9

Field Controls Display Kit For Dealers and Jobbers

A DISPLAY KIT, developed by Field Control Div., H. D. Conkey & Co., Mendota, Ill., to aid dealers and jobbers in advertising to consumers Field Barometric Draft Controls, is available for immediate distribution. Display is shipped completely set up with two controls in place, accompanied by full sales information reproduced on the back of the display for a salesman's use in explaining features to a customer.

The kits are being distributed to dealers through jobbers, and, according to a company announcement, the dealer obtains the display at no extra cost above the regular price he pays for the Field controls.

Ray Oil Burner Co. Has Historical Book

"SAN FRANCISCO SINCE 1872," an exceptionally interesting book or brochure, has been published by the Ray Oil Burner Co., San Francisco, primarily as a vehicle for distributing prints of an outstanding series of historic photographs from the collection of the late Milton S. Ray. The particular date mentioned in the title is the year that the Ray company was started, manufacturing originally galley ranges for the windjammers and sidewheel steamboats that served the city's frontier development. The company did

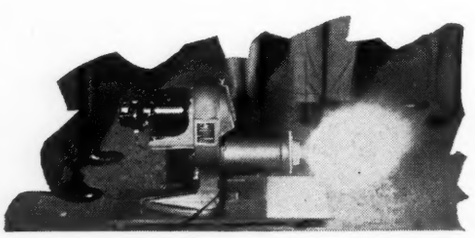
Conserve oil this Winter

REPAIR if you can . . .
If not REPLACE

OIL thus saved will permit additional new installations in your territory. But when replacing . . . remember . . . no one profits if the new burner is not of more advanced design than the one you replace. For instance can you make the following statements and prove them to your customer's satisfaction:

1. ***Saves when STARTING***
   No warming up period required . . . . . (*See picture below*).
2. ***Saves when BURNING***
   Because of better mixing . . . . . (*See picture below*).
3. ***Saves when STOPPING***
   Air shutter closes when burner stops . . . no fixed air gate . . . . fuel savings up to 15%.

The Beckett COMMODORE saves every minute of the heating season.
A few territories available.



An amazing demonstration — BECKETT COMMODORE burns outdoors without aid of fire box — ignition cut off — retains normal flame.

THE R. W. BECKETT CORPORATION,
ELYRIA, OHIO
COMMODORE Oil Burners

SOME COMMODORE FEATURES

- No burner parts exposed to high temperatures
- Progressive air rotation—positive air delivery makes cleaner, quieter, hotter fires
- More dependable ignition
- Lower nozzle temperature
- Automatic damper control —saves fuel
- High tension cable eliminated
- All rotating parts dynamically balanced
- Motor and pump shafts accurately aligned
- Four main assemblies—accessible, special tools not needed
- Easy installation and adjustments — tamper proof
- Finger-tip air control — tamper proof

FOR HOMES • CHURCHES • SCHOOLS • APARTMENTS • BUSINESS BUILDINGS • SPECIAL APPLICATIONS

not start making oilburners until 1907; in that year they introduced residual fuel burners.

Consolidated Presents New Heating Line at Meeting

A RECENT factory sales meeting for distributors held at Lafayette, Ind., by Consolidated Industries, Inc., featured presentation of a new, complete line of heating products. A two day series of conferences, attended by personnel from all sections of the country and Canada, saw Jetronic oilfired space heaters and floor furnaces, newly developed by Consolidated and heard the announcement that the company is ready to merchandise a complete line of furnaces and winter air conditioning units. The new units are in addition to the present line of conversion burners and stokers already offered.

W. T. Winter, president and W. W. Timmis, general sales manager, conducted sessions and presented test data to illustrate heating efficiency for the new Jetronic heaters.

Calimore Oil Floor Furnace Has Output Up To 75,000 Btu

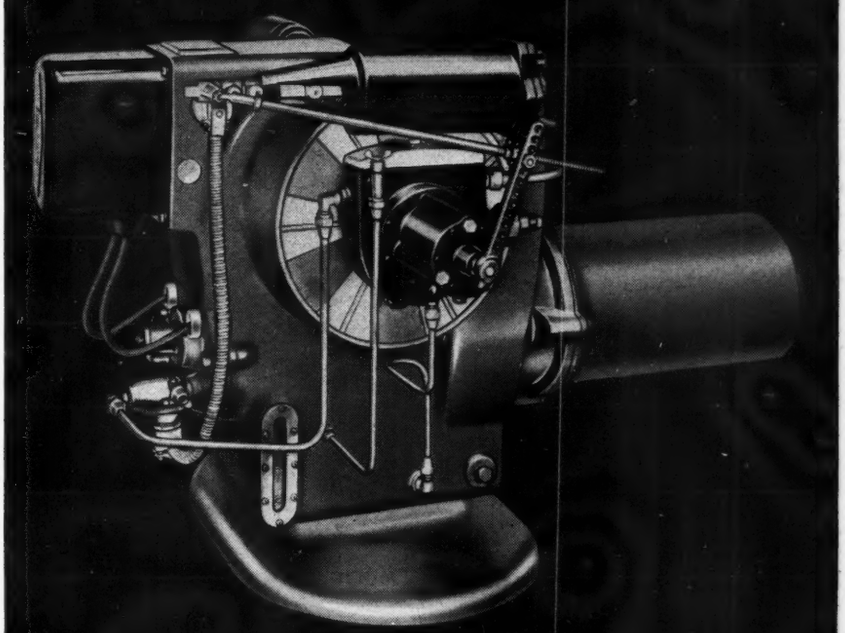
A FLOOR FURNACE, added to the line offered by Calimode, Inc., Atlanta, Ga., has an operating range from 35,000 to 75,000 Btu/hr, made possible through adjustments to the two-piece burner. A primary and secondary heat exchanger assures long flue travel in the compact unit, which requires only a 20" x 30" grill opening and is 28¾" overall in depth.

The burner assembly, consisting of oil control, fan and electrical connections mounted together on one panel, is designed to make installation easy. Burner incorporates a Lo-Pilot for small fuel consumption. Other floor furnaces are available with outputs of 100,000 and 125,000 Btu/hr and a conversion burner of 150,000 Btu capacity.

Autocar's Five Way Seat Reduces Driver Fatigue

DRIVERS' SEATS in new Autocar trucks can be raised to three different positions at the front and three at the back, while the back cushion, hinged at vertical center, can be set in any one of four positions. The improved seats are described as aids to safety by contributing to more comfortable and easier driving, with resultant reduction in driver fatigue.

Cleaver-Brooks
HEV-E-OIL BURNER



FEATURES

- Burns low-cost zero-test No. 5 oil.
- Burns catalytic oils.
- Automatic Electric Ignition.
- Flame Modulation.
- Low Fire Start.
- Automatic Pressure lubrication.
- Nozzle oil shut-off valve.
- High Combustion Efficiency.
- Built by pioneers in oil-fired steam generators, who have the know-how of high-efficiency oil combustion.
- Available in sizes for immediate delivery for home, commercial and industrial use.

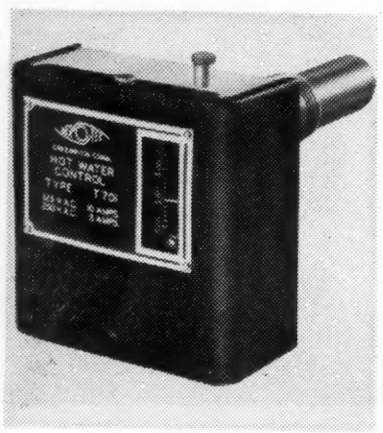
Profitable franchises to reliable established dealers.

HEV-E-OIL BURNER DIVISION • CLEAVER-BROOKS COMPANY
363 East Keefe Avenue, Milwaukee 12, Wisconsin

New Products

Adjustable Hot Water Temperature Control

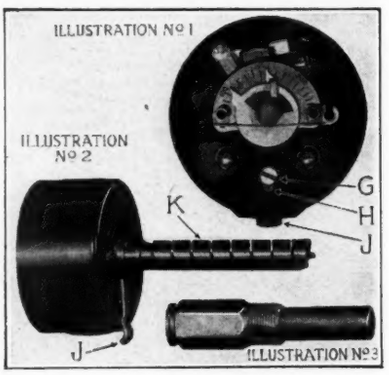
AN AEROTEC boiler control, the T-701, constructed of heavy gauge steel and of the hot water immersion type, is available through Thermix Corp., Greenwich, Conn., national distributor. Differential is fixed at 10° F. Easily read scales per-



mit accurate settings of ranges between 60° and 200° F. by means of a fingertip adjusting knob. A microswitch, available in 110 V.-10 amp. or 220 V.-5 amp., normally closed, is available for the electrical contact of the control, which has a cadmium-plated frame and bonderized cover to prevent corrosion. The T-701 may be mounted in any position and measures 3⅝" x 3⅝" x 1⅞".

Mercoid 437 Immersion Control With Range From 80-240° F.

TYPE 437 immersion control, for use with automatically controlled hot water or steam boilers, storage tanks and industrial applications requiring positive liquid temperature regulation, has been added to the line of Mercoid Corp., Chicago 41, Ill. A bimetallic element within an immersed copper well is detachable, making possible the removal of the instrument without draining the system. Outside double adjustment is conveniently located at the center of the cover and both range and differential can be adjusted to meet varying conditions without the use of tools. A calibrated dial indicates by pointers high or low temperatures in degrees Fahrenheit. Installation in cramped quarters is facilitated since the control's case measures only 3¾" in diameter. Examination through a glass opening in the cover

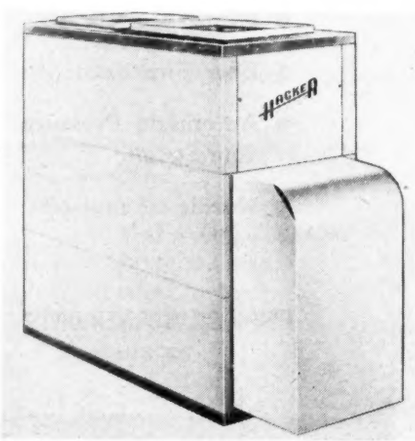


indicates on or off position of the mercury contact switch, which is hermetically sealed and unaffected by dust, dirt or moisture.

Three models of Type 437 controls have adjustable ranges from 80° to 240° F., minimum differentials of 10° or 15° F.

Hacker Winter Conditioner Is A Complete Packaged Unit

HACKER oilfired winter air conditioning unit, a product of Standard Heating Equipment Co., Waterloo, Iowa, is delivered completely assembled, is 24" wide, crated with skids, and goes through smaller than ordinary doors. The unit, with a capacity of 100,000 Btu at the bonnet, provides automatically all functions of winter conditioning, including humidification and filtering. A stainless steel com-

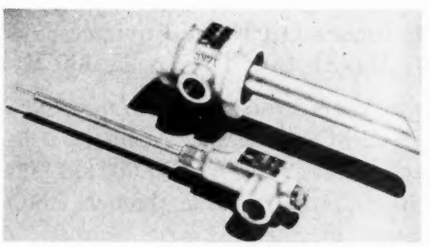


bustion chamber facilitates quick heating, while a baffle at the top of the unit forces the flame to travel in a circular motion around the interior.

A conventional gun type oilburner fires the unit and a 12" blower pulls air through a 16¼" square air intake. An automatic draft control is standard equipment on the unit, whose blower may be used during the summer to circulate cool basement air.

B & G Air Eliminator For Hot Water Systems

A BOILER FITTING and a tank fitting comprise the Airtrol System for elimination of air accumulations in the radiators of hot water heating systems recently announced by Bell & Gossett Co., Morton Grove, Ill. The boiler fitting consists of a T-shaped fitting in which is inserted a tube, extending the supply main down into the boiler water and preventing air, accumulated at the top of the boiler, from rising into the piping and radiators. Air



flows around the tube up into the pipe leading to the tank fitting.

To explain the system, B & G points out that in ordinary operation, air cannot flow into a compression tank without an equal amount of water flowing back into the system. A ½" connection used on the tank frequently causes air binding, while a ¾" connection eliminates capillary attraction and gravity circulation within the pipe brings down air-saturated water from the tank to the system. The Airtrol tank fitting provides separate passages for air to flow to the top of the tank and the water it displaces to flow back into the pipe connections to the system.

York-Shipley Announces HG7 Horizontal Boiler Units

THE HG7 LINE of oilfired horizontal boiler-burner units, introduced by York-Shipley, Inc., York, Pa., consists of four models with installed ratings of 700, 900, 1100 and 1300 sq. ft. steam radiation;

ACCURATE FILLS *mean* SATISFIED CUSTOMERS!

Dial Reading in Fractions

Rochester "Dual-Dial" gauges give you accurate readings in fractions, regardless of variations in given tank sizes. No other guage provides this degree of accuracy.

Over a Million Installations

With Rochester "Dual-Dial" gauges on the job, overfilling or underfilling is never a problem. This means millions of satisfied customers.

Safe Under Filling Pressure

"Dual-Dials" are actuated by magnetic action. No shaft connection between tank and dial chamber. This prevents leakage, avoids fire hazards, speeds up delivery, saves time.

Time-Tested

For over 25 years, Rochester gauges have proved reliable under all conditions. Underwriters' listed.

A recent survey among leading factors in the fuel oil business reveals overwhelming preference for Rochester's dependable "Dual-Dial" Oil Level Gauge. Over the years it has proved to be the only accurate gauge developed to meet the special requirements of the industry.

Rochester's production facilities have been increased to turn out in a single month nearly as many gauges as during an entire year shortly before the war! So, to keep everybody happy, insist on Rochester "Dual-Dials."

BUILD YOUR BUSINESS WITH "DUAL-DIALS"

Made for 275-gallon oil burner storage tanks and stocked for tank depths of 22", 24", 26", 27", 42" and 44"; 1½" and 2" pipe thread connections. Special lengths to order.

ROCHESTER MANUFACTURING CO., INC.
8 Rockwood Street, Rochester 10, New York
Canandian Representatives, R. W. Anderson and Co.,
125 Redpath Avenue, Toronto, Ontario, Canada

Rochester *ENGINEERED INSTRUMENTS*

Guaranteed Accuracy

LIQUID LEVEL, TEMPERATURE AND PRESSURE GAUGES

Paragon · Paragon · Paragon ·

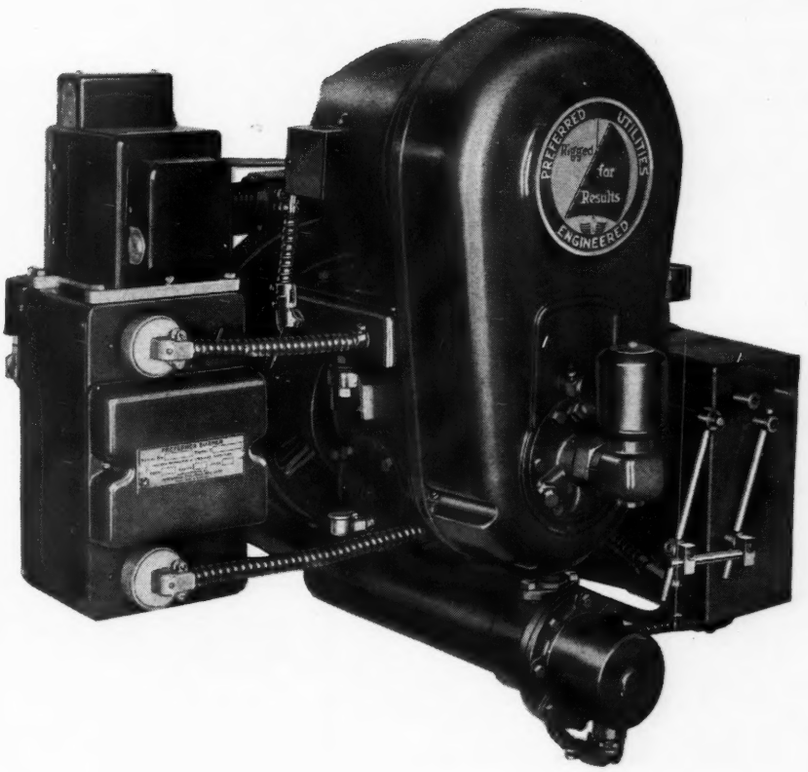
PREFERRED'S

NEW BELT DRIVEN HORIZONTAL ROTARY TYPE

HEAVY OIL BURNER

5 to 150 gallons per hour capacity . . . fully automatic operation even with the new catalytic residuals.

This new Preferred Heavy Oil Burner is the result of over a quarter of a century's experience as dealer, distributor and manufacturer in the oil combustion field . . . experience which includes laboratory and field work with the new catalytic residual oils.



Outstanding Features of this New Burner include:

Dual-Pump Reservoir — maintains a constant discharge volume.

Patented "Voluvalve" Fuel Regulation — meters predetermined quantity of oil regardless of variations in temperature, pressure or viscosity.

High-Speed Belt Drive — provides higher cup speeds to atomize the new heavy catalytic oils.

Precision Air-Oil Control — maintains accurate proportions of air and oil for most efficient combustible mixture.

Sure-Fire Ignition — hot-wire-to-gas ignition insures dependable ignition and minimizes puff-back starting.

Better Atomization—extra long atomizing cup driven at high speeds provides better atomization.

Extra Long Nozzle — facilitates installing self-supporting, longer lasting, better insulated combustion chamber front wall.

For complete details, write for your copy of Bulletin 175. Do it now.

DEALERS: There are some exclusive dealer territories still open. Write and outline your qualification for the territory in which you are interested.

PREFERRED UTILITIES MANUFACTURING CORPORATION, 1860 BROADWAY, NEW YORK 23, NEW YORK

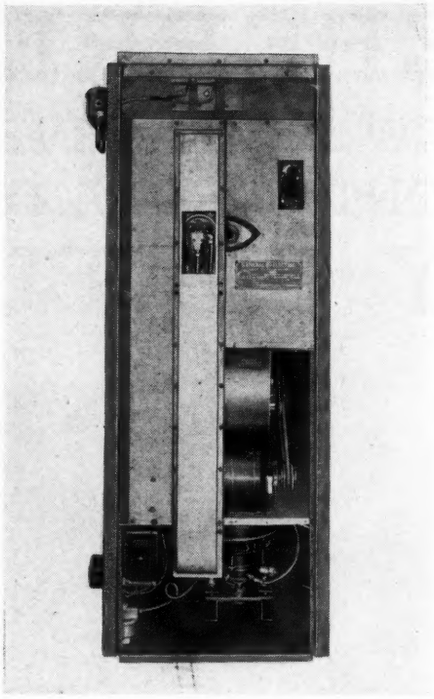
PREFERRED UTILITIES MFG. CORP.

fuel oil & oil heat

Because of low cost, dealers are reported including the enclosure as a part of the regular installation, with a decalcomania affixed to the front. It is said also to offer a solution for modernizing basements or where service calls reveal tampering with the burner.

GE Oilfired Furnace Unit Designated LB-15, 20

PRODUCTION has begun on two models of a newly designed, packaged, oilfired winter air conditioning unit by General Electric Co., Air Conditioning Dept., Bloomfield, N. J., LB-15 unit rated at 60,000 Btu; LB-20, 85,000 Btu. The unit, fired with a GE burner, utilizes oil-impact method of atomization, employing opposing streams of secondary air and low pressure oil spray, in a horizontal, instead of vertical, combustion chamber. The unit has been approved by Underwriters for installation in small spaces, with minimum clearances of 2" on both sides and back, permitting closet or utility room, as well as basement installation. Further flexibility is provided by ability to place



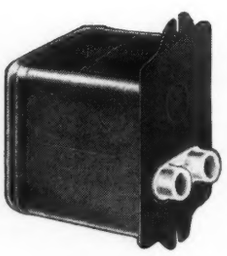
air filter and frame on either side, or on the back, of the fan housing cabinet.

Safety factors incorporated in the unit include a master control which times the sequence of operations during the starting period and a flame detector, which shuts off the motor compressor in event of flame failure. The units provide all elements of winter air conditioning, including automatic humidification and circulation by a low speed centrifugal blower, and are shipped completely assembled and tested. LB-15 unit weighs 285 lbs.; LB-20, 350 lbs.

Erie Oil Filter For Storage Or Truck Tanks

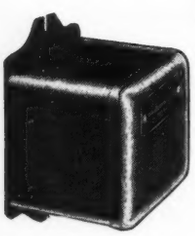
SIX MODELS of filters, announced by Erie Meter Systems, Inc., Erie, Pa., are designed for installation on storage or truck tanks for removal of sludge, dirt and condensation from fueloil. Developed and used extensively during the war, provision is made in the filters for water segregation and its manual or automatic removal.

Sizes handling 25, 40, 80 and 100 gpm, all 40" long, are compact units consisting of an inside cylinder which contains a renewable filter pack. Two larger 80" units handle 200 and 300 gpm flow.



PALMER OIL BURNER IGNITION TRANSFORMER

Catalogue No. O.B.-1



Dimensions (Without mounting plate). Mounting plate furnished to specification.

Length	Width	Depth
4¾"	4¼"	4 13/16"

This device is an air-cooled — high potential, step up type, interchangeable Oil Burner Ignition Transformer.
It has mid point of secondary grounded, and is rated as follows:

PRIMARY		
Volts	Cycles	Volt Amperes
115	60	250
SECONDARY		
Volts		Milliamperes
10,000		22

Built-in radio barrier eliminates objectionable radio interference.
Spacious junction box is available at the top of case, and knockouts are provided in two sides and in the end for convenient connections.
Primary leads are 24" long.
New streamlined case is offered in black crackle finish.
Listed by Underwriters' Laboratories.

DORN EQUIPMENT CO.
89 BROAD ST., BOSTON 10, MASS.

GENERAL CONTROLS
OIL HEATING PACKAGE SET

T-23 Package Set

For thermostatic control of furnaces, circulating heaters, conversion burners, etc., where #4 and lighter oils are used.

Dependable and economical T-23 Packaged Controls are easy and quick to install on new and old installations.

Complete Set Includes

Silent A.C. Type K-20-3 Oil Valve with by-pass adjustment for minimum flow regulation or pilot; T-70 Two-wire Metrotherm Thermostat; General T-O Transformer and 30 feet of wire. Everything necessary for immediate installation.

Write for Catalog 52C.

GENERAL CONTROLS
801 ALLEN AVENUE — GLENDALE 1, CALIF.

FACTORY BRANCHES: PHILADELPHIA • ATLANTA • BOSTON • CHICAGO • DALLAS KANSAS CITY • NEW YORK • DENVER • DETROIT • CLEVELAND • PITTSBURGH HOUSTON • SEATTLE • SAN FRANCISCO • DISTRIBUTORS IN PRINCIPAL CITIES

TANK GAGING

comes down to earth...

AND...RIGHT BEFORE THE OPERATOR'S EYES

1. Eye Level Readings—illustrated lower left, accurate, time-saving. Easy to install, even while tank is in service. High or low pressure.

2. Remote Dial Readings—engineered in a ***complete gaging system*** that eliminates many gaging operations. Electric dials, illustrated at right, are mounted on master control panel always before your operator's eyes. For information contact nearest Smith representative.

SMITH METER COMPANY

SUBSIDIARY OF A. O. SMITH CORPORATION

Factory — 5743 Smithway, Los Angeles 22, California

SALES OFFICES: NEW YORK, CHICAGO, HOUSTON, LOS ANGELES

Local Stocks at Convenient Points • Local Agents in All Principal Cities

Guardian Puts Couplings Through Supply Jobbers

GUARDIAN PRODUCTS CORP., Michigan City, Ind., has instituted a dealer jobber program of distribution to make its flexible couplings more easily available to the oilburner service organizations, according to V. E. Malmfeldt, president. Plant facilities are being enlarged and additional production is planned.

Coupling lengths are being standardized in six lengths from 3 through 5½ inches in one-half-inch gradations, both in the regular and splined types. The bores all will be half-inch with steel bushings furnished to fit any standard shaft size. This allows dealers to stock as few as twelve coupling sizes to cover all ordinary requirements. Couplings will be packaged six to a box of a size for easy handling.

The company will continue to make couplings to manufacturers' specifications, Mr. Malmfeldt reports.

Superfex Gravity Furnace Features 3-Stage Operation

SUPERFEX MODEL 74 Thermaflow oilfired, gravity furnace has been designed by Perfection Stove Co., Cleveland 14, Ohio for basement installation and has a capacity of 60,000 Btu at the bonnet. It burns No. 1 oil in a vaporizing burner and features 3-stage operation, embodying pilot fire, a coasting or intermediate fire, a stage new to gravity furnaces,

which maintains heat balance and even temperature and the booster stage of fire which operates when heat demand is greater than can be supplied by the intermediate fire.

Special features of the unit are listed as a large radiator surface, long flue travel, mechanical draft with individual thermostatic control, constant level valve with built-in 3-stage oil delivery control. Casing parts are bonderized to protect the baked enamel finish. The packaged unit when installed requires connection only to room thermostat, fuel tank, chimney outlet and heat distribution system.

Kraissl Series 80 Pumps For Bulk Plant and Trucks

FOUR SIZES of pumps comprise the series 80 groups introduced by Kraissl Co., Hackensack, N. J. Designed for bulk plant or tank truck use, especially where pumps are required to perform satisfactorily over a wide range of viscosity characteristics, the pumps are intended for slow speed operation. At 400 rpm, sizes are available with rated capacities of 60, 100, 150 and 200 gpm. The series features Tri-Rol operation, employing three rollers positively positioned by floating rings, the roller assembly being carried by a rotary piston or rotor located eccentric to the inside periphery of the housing.

Standard pumps are manufactured with

Make EXTRA PROFITS This Easy Way!

POORER grades of burning oils and acute labor conditions are no doubt putting a terrific strain on your ability to give proper service to your customers. Get away from these adjustments and cleaning difficulties by selling KLEEN-FLO Fuel Oil Conditioner. KLEEN-FLO helps preserve equipment and increases oil burner efficiency—improves combustion—reduces carbon and soot formation—eliminates "puff backs," odor and smoky chimneys — overcomes water and sludge. One quart of KLEEN-FLO conditions 500 GALLONS OF OIL—simply add thru oil fill line. Tested, approved and used by many of the country's great industrial plants. Write for profit-making facts today.

COMBUSTION UTILITIES CORP.
1451 Broadway New York 18, N. Y.

Canadian Division
1253 McGill College Ave., Montreal 2

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ALLIED APPLIANCE COMPANY
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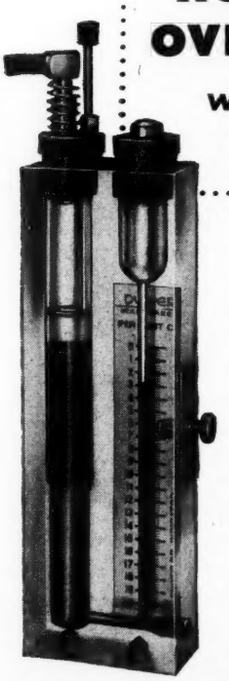
West Coast Distributor
DIAMOND OIL CO., INC.
550 Bauchet St., Los Angeles 54, Cal.



HOW TO AVOID OVER-PRESSURES
while determining CO_2 Indication

The Dwyer Transparent CO_2 Indicator has solved this problem. Pump your gas sample into the Indicator, holding the plunger down. As the flue gases are introduced the unique Dwyer expansion bladder controls expansion of the gas, while the patented plunger valve prevents over-pressure sampling. It's as simple as that—and one of the reasons for the scientific accuracy of CO_2 readings. There are many other profitable advantages in the Dwyer Transparent CO_2 Indicator. For details, write to:

F. W. Dwyer Mfg. Co.
315 South Western Ave., Chicago 12, Ill.

Approved

Meaning — approved by American Gas Association and Underwriters' Laboratories, Inc.

Various Rheem Appliances carry the approvals of both these top testing authorities.

The full line of Rheem gas-fired furnaces, gas console heaters, and gas water heaters are approved by AGA. All Rheem electric appliances meet the rigid tests of U.L. Rheem oil-fired water heaters and oil console heaters also meet the safety and fire requirements of U.L.

These approvals mean top quality, safety, performance. And that's one more reason why you'll find it *easier* to sell Rheem Appliances.

There's a *complete line* of Rheem Heating Appliances, so you can more efficiently order carload assortments of merchandise.

For dealers there's the Rheem Floor-Finance Plan, which enables you to stock a full line of appliances, for only a 10% down payment.

And that's not all! Every month national advertising reaches millions of prospects—and presells them on the Rheem brand name.

For all these reasons—isn't it good business for you to sell Rheem? Mail this coupon today and find out about this profitable opportunity.

Rheem

MANUFACTURING COMPANY

All Gas Appliances are approved by the American Gas Association. All Electric Appliances are approved by the Underwriters' Laboratories, Inc.

RHEEM, Dept. R-D 10
570 Lexington Avenue, New York 22, N. Y.

Please tell me more about the profitable line of Rheem appliances.

NAME_____

COMPANY_____

ADDRESS_____

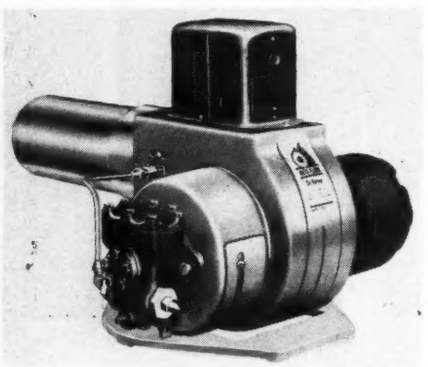
CITY_____ STATE_____

fueloil & oil heat

casings and rotor of iron construction, hardened steel rollers and steel shaft. Provision has been made for replaceable inserts, although limited friction is encountered only at the point where the rotor drives the rollers. A return seal stuffing box, standard equipment with this series, provides for internal return of liquid past the bearing seal direction to the suction zone.

Homestead Gun Type Oilburner With Firing Rate Up to 3½ Gph

AUTO FLAME conversion oilburner, offered by Homestead Equipment Mfg. Corp., Kew Gardens, N. Y., has a firing rate of 1 gph in the small size, 3½ gph in the largest model. High efficiency ratings have been obtained firing the burner in laboratory tests using heavy catalytic cracked oils. The burner features a top mounted transformer and is offered to dealers on exclusive territory agreements or for selling under private branding, where desired.

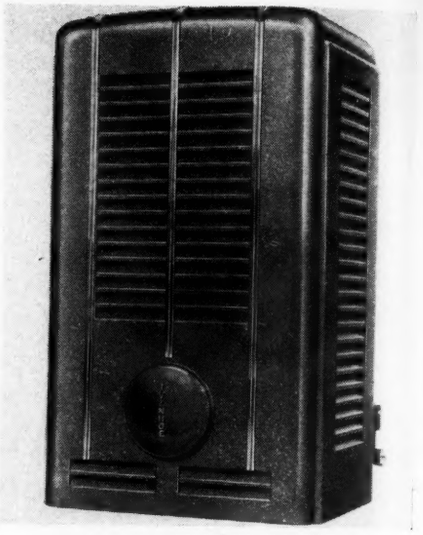


The burners feature grey iron castings, Ohio and General Electric motors, Webster and Tuthill fuel units, Webster and Jefferson transformers and other standard parts to facilitate service and maintenance.

Perfection Announces Ivanhoe Space Heater

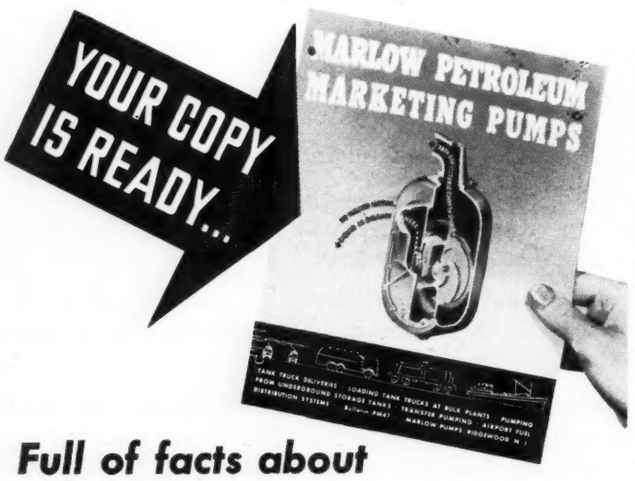
MODEL 2130 Ivanhoe oilfired space heater, newly developed by Perfection Stove Co., Cleveland 4, Ohio, measures 33½" high, 19" wide and has a rated output of 30,000 Btu/hr. Fuel is fed through a constant level valve, standard equipment on this model, and a removable 3-gal. reservoir may be furnished as an accessory. Also available as an extra is a thermostatic control.

Proper draft is maintained by an automatic regulator furnished with each model. The vaporizing burner, which fires the heater, is made of heavy gauge steel, with primary and secondary air inlets, and no moving parts. The 2130 is finished in brown baked enamel, with chrome trim.



Klemm Introduces Two Fueloil Filter Models

FEATURING a new streamlined metal bowl, designed to meet Underwriters specifica-



Full of facts about a BETTER petroleum pump

Self-purging even on high suction lifts • Won't vapor lock • Dripless mechanical shaft seal eliminates repacking shutdowns • Other time-saving, profit-protecting features . . .

Write for this new bulletin and name of distributor near you who sells this proved-better pump for gasoline and fuel oil handling.

MARLOW PUMPS 596 Greenwood Ave. Ridgewood, N. J.

IMMEDIATE DELIVERY

1000 GALLON CAPACITY
2 COMPARTMENTS

Fuel Oil Unit

Rugged Construction—Light Weight
Long Trouble-Free Service
Dependable Operation in Severe Temperatures

READY FOR OPERATION

THE DAVISBILT PRODUCTS COMPANY
AFFILIATED WITH LIBERTY PRODUCTS CORP.
CINCINNATI, OHIO

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NONE BETTER

OIL BURNERS

FOR

INDUSTRIAL
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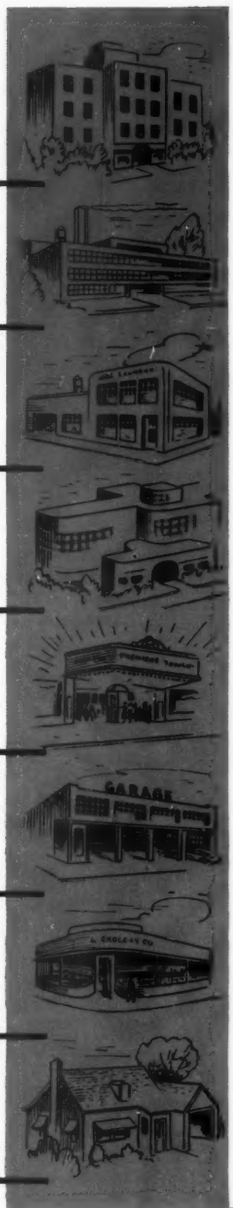


COMMERCIAL—The Paragon Horizontal Rotary Oil Burner is the answer to efficient, economical, commercial heating. The Paragon "HR" Series Oil Burner gives you the "Sales-Clinching" argument of real fuel savings because the "HR" series is manufactured to burn *cold No. 5 oil.* Fully illustrated booklet sent on request.

RESIDENTIAL — The new, modern Paragon Oil Burner, backed by many hundred million gallons of fuel oil experience, represents effortless, money-saving, automatic oil heating at its finest. Burns No. 2 oil.

DEALERS! If you want to draw MORE oil burner customers, and enjoy MORE profits from a fast seller . . . tie in with the best—tie in with PARAGON'S country-wide dealer hook-up. Mail coupon below for details, *today!*

"IF IT'S A Paragon—THERE'S None Better"

Paragon Oil Burner Corp.

75 BRIDGEWATER STREET
BROOKLYN 22, N. Y.

PARAGON OIL BURNER CORP.
75 Bridgewater St., Brooklyn 22, N. Y.

GENTLEMEN: *Rush your dealer proposition today!*

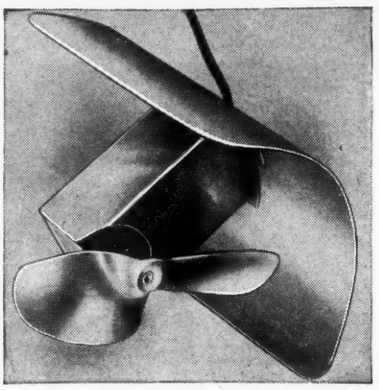
NAME.....

FIRM NAME.....

ADDRESS.....

fuel oil & oil heat

tions, two models of fueloil filters have been added to the line of Klemm Automotive Products Co., Chicago, Ill. The new models employ a controlled porosity Chemistone filtering element, as do all other Klemm filters, and can be used with equipment burning No. 1, 2 or 3 oil. Model No. FF-430, ⅜" I.P.T. and No. FF-401, ¼" I.P.T., identify the latest additions. Models of identical capacity can be furnished with glass bowls for installations where visible filtering is desired.



McLarty Booster Fan Installed In Warm Air Duct

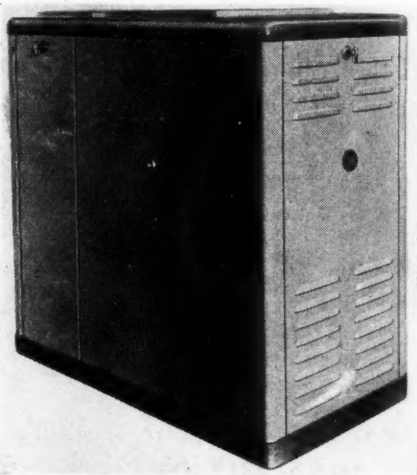
A BOOSTER FAN, developed by McLarty Systems, Battle Creek, Mich., is installed in the warm air duct of gravity systems to provide positive circulation to cold or inadequately-heated rooms. The fan, installed by cutting a hole in the duct, will fit pipe sizes from 8" to 12". Air is drawn from outside the duct and carried directly over the motor bearings, making the unit self-cooled. Utilizing 110 V. house current, the fan can be operated by a room thermostat or by manual control.

The patented fan housing and fan blade are made of aluminum. Current consumption of the electric motor equals that of a 15 watt light bulb. Many of these fans already have been sold in a limited area and they now are being offered nationally for the first time.

Rheem Offers Oilfired Winter Air Conditioner

AN OILFIRED winter air conditioning unit has been added to the line of Rheem Mfg. Co., New York 22, N. Y. Series 3601 unit is equipped with a cold rolled steel cabinet, which encloses all parts, and is finished in baked, long-lasting enamel of a special formula. Automatic controls are furnished with the unit, which features a welded combustion chamber and ample sized filters and blowers to clean and circulate air. Two sizes are available, one with a bonnet output of 106,000 Btu/hr, 90,000 output Btu/hr at the register; the second, larger model rated at 153,000 Btu/hr at the bonnet, 130,000 Btu/hr at the register.

Standard equipment includes combination fan and limit control, barometric con-



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The MARK OF A GOOD RELIABLE ROTARY PUMP

VIKING PUMPS — GEAR WITHIN A GEAR — JUST 2 MOVING PARTS — REG. T.M. IN U.S.A. — VIKING PUMP CO. CEDAR FALLS, IOWA

Look for this registered trade mark and the name VIKING on all your rotary pumps. It is your assurance of a good, reliable pump for handling all types of fuel oil truck delivery.
It means you have a pump based on the design of more than a million others. Built from sound rotary pump experience and know-how unsurpassed in the field. Look to Viking, the rotary pump manufacturer who builds to serve you now and in the future. Be safe. Be sure. Buy Viking. Write today for free bulletin 1500EE.

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GREATER OIL BURNER SALES

This new Oil Burner, scientifically designed by Heatcraft, has established a new standard of efficiency.

It embodies 7 special features, each of major importance . . . and in addition, incorporates ALL the other important oil burner advantages.

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HEATCRAFT

HEATCRAFT COMPANY
VAUGHAN BLDG., LOUISVILLE, KENTUCKY

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Pezzillo

HOT WATER CIRCULATOR

Why is PEZZILLO a better pump—and why has it gone over so big? The answer is comparatively simple. PEZZILLO had a *fresh start.* PEZZILLO had advantages denied to the makers of conventional pumps. PEZZILLO knew what the 'bugs' were in conventional pumps—and deliberately designed them out. And to guarantee perfection PEZZILLO makes every part of the pump in its own plant with the exception of the housing which is a special, non-ferrous alloy. Proof? Over 30,000 PEZZILLO Pumps in use today and less than ⅛ of 1% have required service. That is why you can sell—or install a PEZZILLO, with absolute confidence. See your local jobber or write for more information.

EXTERNAL CENTRIFUGAL SWITCH

Located outside of the motor housing away from the destructive effects of excess bearing oil (the usual cause of switch failures). Can be adjusted or replaced, on the motor, in less than five minutes. Ask for demonstration.

IMPROVED OVERLOAD PROTECTOR

Simplified — sensitive — electrical failure almost impossible. Automatic reset. Has never failed in thousands of installations.

SEALED OILITE MOTOR BEARINGS

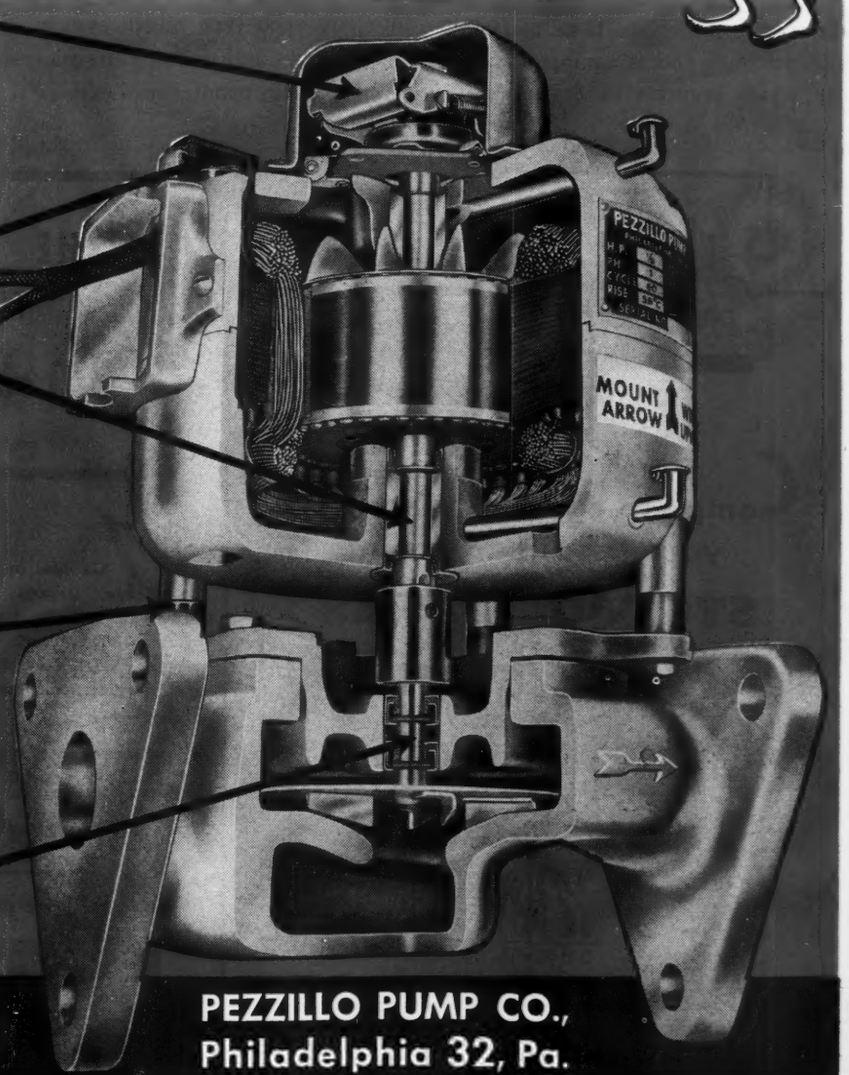
Solves three problems common to conventional design—over oiling, under oiling, or home owner "abuse." Factory assembly will give thousands of hours of service without attention. If over oiled, no harm can be done. If neglected entirely, sealed-in reservoir of oil gives perfect protection.

VIBRATION PROOF MOUNTING

Designed especially for PEZZILLO by leading anti-vibration engineers. Live rubber mountings completely eliminate transfer of noise or vibration to connecting pipe. Far superior to springs or any other conventional mounting. Ask to see the amazing VIBROMETER TEST.

BETTER PUMP-SHAFT SEAL ASSEMBLY

A modern marvel of simplicity and efficiency. Impervious to water and oil. Self adjusting to pressures. Contains only two major parts. No heavy seal springs, carbon seals, seal faces, or bearings. Permanently lubricated and sealed at the factory.

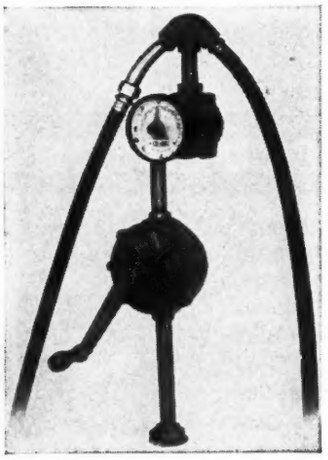


PEZZILLO PUMP CO.,
Philadelphia 32, Pa.

trol, float controlled humidifier, pressure atomizing oilburner with room thermostat and primary combustion control. Burner is flange-mounted.

Bowser Rotary Hand Pump Is Equipped With Meter

FIG. 3005 rotary hand pump, developed by Bowser, Inc., Fort Wayne, Ind., is capable of dispensing liquids up to 10,000 S.S.U. viscosity and is equipped with a meter which registers to 8 gals., with totalizer reading of 9,999 gals. The pump delivers 10 gpm and features an aluminum rotor, graphite-carbon vanes, cadmium plated packing nut and stainless steel springs. The pump includes a 40" suction pipe with bung attachment, 8' discharge hose and aluminum nozzle.

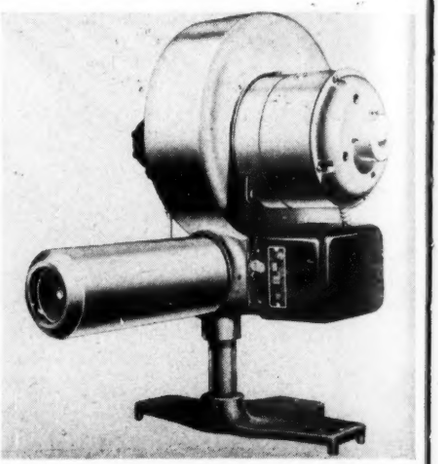


Schaub Deaerator Type Boiler Feed Water Heater

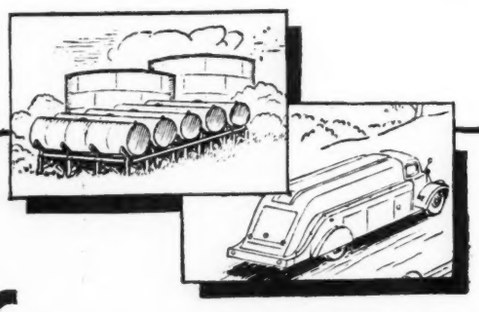
AVAILABLE IN SIZES FROM 100 to 1000 hp. rating, the Deaerator Type Feed Water Heater, announced by Fred H. Schaub Eng. Co., Chicago 23, Ill., consists of a process whereby all feed water is preheated above the boiling point and diffused under pressure through a series of nozzles which spray the water in a very fine film. Oxygen reduction to less than 0.06 cc. per liter is possible with the completely automatic equipment, including gauges, thermostats, regulators, vent condenser and spray header. Several variations of the system can be incorporated into any open type return system. The use of alloys and corrosion-resistant materials reduces maintenance expense.

Airflame Burners Embody Features and Improvements

EXTERNAL IMPROVEMENTS of a line of gun type oilburners made by Airflame, Waukegan, Ill., include a larger blower housing designed to deliver stable static pressures needed for dual air velocities,



a wide and sturdy base with six short legs, unrestricted air intake to fan and "air-sloped" back end to prevent flame flutter. Internally the improved burners feature a by-pass to proportion air be-



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PUMPS • METERS • REELS • HOSES

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RENICK & MAHONEY, INC.

114 Liberty Street, New York 6, N. Y.

THE *New* **BABBIN**

3/4" Thermostatic Mixing Valve

for 1 and 2 Family Homes

This new and improved BABBIN Valve brings fully dependable thermostatic hot water regulation to the small home field. It is adaptable for use on storage tanks, submerged tanks and tank saver units.

- All Bronze Casting . . . "ADNIC" Corrosion-Resistant Thermostatic Unit
- Positive Hot and Cold Water Shut-off • Temperature Range from 70° to 170° F. Only one moving part.

EXPANDING TYPE SOLID LIQUID FILLED PATENTS 2081726 2282152

Get complete details. Write today.

Babbin N.Y.C. THERMOSTATIC CONTROLS

258-60 Canal St. New York

One stands out above the rest!

Performance plainly hinges on the way things are built.

Ohio Motors feature a special *two-piece* type of construction. End brackets — plus integral mounting flanges and motor frames—are made *exclusively* of gray cast iron for greater strength.

STURDIER CONSTRUCTION of *Ohio Motors* assures superior oil burner performance . . . guarantees customer satisfaction.

Ohio MOTORS

THE OHIO ELECTRIC MFG. CO.

5913 MAURICE AVE. • CLEVELAND 4, OHIO

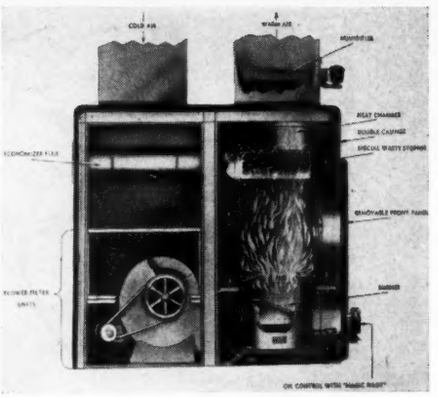
fueloil & oil heat

tween fan and flame, flame shape control and a combustion head to produce a large, hollow flame. Mixing is accomplished by air jets ahead of the nozzle, driving sidewise through the oil mist forming a ball where hydrogen and oxygen ignite. According to the manufacturer the heat thereby created is sufficient for carbon to unite in complete combustion with secondary air blowing slowly in from behind the flame. The heads are offered also to dealers for use in existing installations.

Airflame burners in sizes from ½ to 4 gph are in stock now, with larger sizes contemplated for production in 1948.

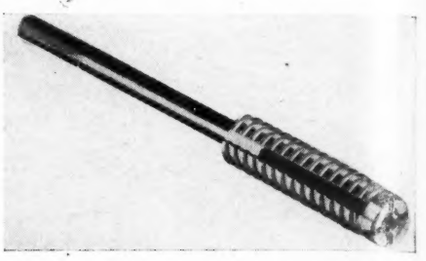
Motor Wheel Introduces New Line of Furnace Units

ELEVEN MODELS constitute the new line of oilfired furnace units announced by Duo-Therm Div., Motor Wheel Corp., Lansing, Mich. Fired with vaporizing burners, capacities range from 50,000 to 108,000, the models offering a choice of either gravity or blower types, manually or thermostatically operated. Blowers are located in a rear compartment in all but two models, which have the blowers underneath the furnace as a space saving feature. Units feature double casings, Economizer flues in the blower compartment of deluxe models, large capacity humidifiers, low voltage controls, oversize blowers and insulated blower-filter units.



Rotary Concrete Drills In Sizes From ¼ In. to 2 In.

ROTARY CONCRETE DRILL CO., Pasadena, Cal., announces a series of drill bits for boring holes in concrete, tile, brick or marble for use with any standard automatic drill. Diamond dressed cutting tips are set in the blunt end of the bit at an angle, permitting use of extreme pressure. Sizes ranging from ¼" to 2" dia. are available. In the outside rim of bits ¾", or larger, there are four cutters which make the bit easier to start and requires only half the normal pressure.



The bits clean their holes as they drill, since, in addition to the outside spiral, the hollow shaft has a slot running the full length of the guide end of the bit, permitting small core and other cuttings to clear from both inside and out.

Hercules Soot Destroyer

A SOOT DESTROYER, developed by Hercules Chemical Corp., New York 13, N. Y., is a scientifically prepared non-inflammable and non-explosive powder. When intro-

The HEATER with the LONG LIFE

50,000 B.T.U.'s! Manual Control!
10-inch Vaporizing BREESE Burner!
Orders Accepted for Early Deliveries

Some Territories Still Available for Established Warehousing Distributors

The CASCADE MFG. CO.
Culver City, California
Please send me more information about HEWITT Oil Floor Furnaces ☐ Dual Heaters ☐ Space Heaters ☐
Name: _____
Address: _____
City: _____ State: _____

Hewitt
OIL HEATERS

MAN WANTED

If you are seeking a better job in the oil heating business, and you measure up to the qualifications set forth here, you should answer this advertisement.

We are one of the oldest and best established oil heating manufacturers in the industry, financially sound, with dealers from coast to coast.

The job we have open is an excellent one in our **Field Engineering Department.** The man finally selected for the job should be able to prove several years' practical installation and service experience on conversion burners, oil-fired boiler-units and warm air units. He must know the practical part of the job as well as the engineering theory, must be thoroughly familiar with controls and electrical wiring, must understand combustion quite thoroughly, and at the same time have a good appreciation of the sales angle. The position will require considerable travelling, to aid and instruct dealers in their service and installation problems. In short, he is probably the service manager for a large oil burner dealer right now.

This job has an excellent future, and is a permanent connection for the right man. Write, giving full details of experience, at least **three references,** and a photo of yourself. Please state salary desired. Box 667.

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really sells is dependable

PROTECTION and CONTROL

in the form of relief valves and regulators for efficient, economical handling of domestic hot water supply systems and space heating systems.

The range and details of WATTS plumbing and heating specialties are covered in the new WATTS catalog, No. 47.

Anticipate coming jobs by having this catalog at hand for reference to probable needs of Protection and Control devices. Request it today.

WATTS products are stocked and distributed by *your* wholesaler.

There is a dependable WATTS regulator for any job you may meet.

WATTS
A NAME TO REMEMBER

WATTS REGULATOR COMPANY
LAWRENCE, MASS.

Automatic · TEMPERATURE *and* PRESSURE REGULATING SAFETY DEVICES ·

... PROTECT-CONTROL.

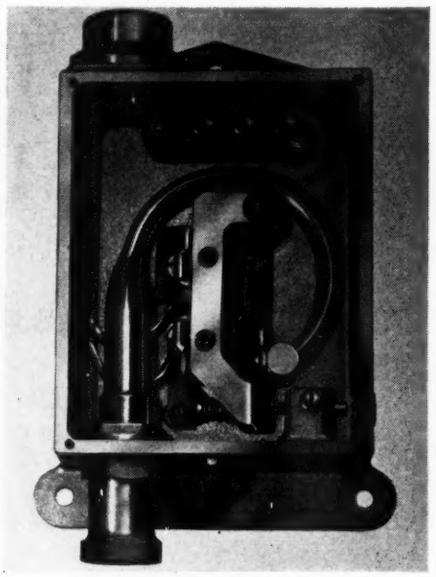
duced with a blow gun into an oilburning boiler, it vaporizes, travels up the flue and deposits itself on the soot, causing it to become ignited and burn itself away. Citing figures which show that 1/8" of soot causes a 35% fuel loss, in literature describing the product, Hercules outlines procedure for initial and subsequent applications to keep boiler clean.

Electronic Servo System For Heavy Industry Use

AN AUTOMATIC electronic remote control and positioning unit for control of valves, dampers and other mechanisms is announced by Askania Regulator Co., Chicago, Ill. Consisting of a transmitter, control amplifier and receiver, the system is designed for heavy industry use and can be furnished with signal lamps or audible warning signals to indicate position and direction of travel of the controlled equipment.

Meletron's Model 310 Switch Is Actuated by Pressure

ONE OF A WIDE LINE of switches, actuated by pressure of liquids, air or gases, model 310, announced by Meletron Corp., Los Angeles 38, Cal., can be used as a control mechanism for heating and air conditioning applications. Model 310 switches



incorporate an Underwriters approved snap action Micro switch and are furnished with a uniform size housing regardless of operating range. Other features provide for convenient adjustment, explosive-proof design, construction which prohibits tampering. Switches of this model in three groups are rated at 500, 1,500 and 3,000 psi, maximum system pressure.

Super Refractory Cement Makes Hot or Cold Patches

SUPER #3000 refractory cement, recently announced by Refractory & Insulation Corp., New York 5, N. Y., is designed to withstand temperatures up to 3100° F. The cement is shipped in 200 lb. drums, mixed to proper density, ready for use. Developed especially for making hot and cold patches in high temperature refractory brick work, Super #3000 can be mixed with water and used for setting brick and washcoating.

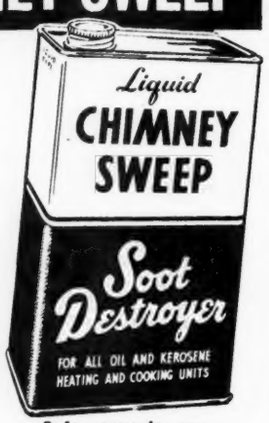
Mulkey Oil Floor Furnace Designated As Model 500

MODEL 500 oil floor furnace, produced by J. F. Mulkey Co., Detroit 6, Mich., requires a floor opening, measuring 20 3/8" x 30 3/8", for installation and weighs 140 lbs. crated for shipping. Unit is 20 1/8" wide, 30 1/8" long and 41" deep, equipped with

WANTED by OIL USERS
Liquid CHIMNEY SWEEP

FOR OIL BURNERS, ROOM HEATERS, KEROSENE STOVES AND RANGES.

Liquid Chimney Sweep, sensational war-time discovery, quickly helps clean out soot and prevent soot from forming. Helps dissolve and remove gum deposits, sludge and water. Reduces oil odors. Retards rust and corrosion. Helps prolong life of burner.



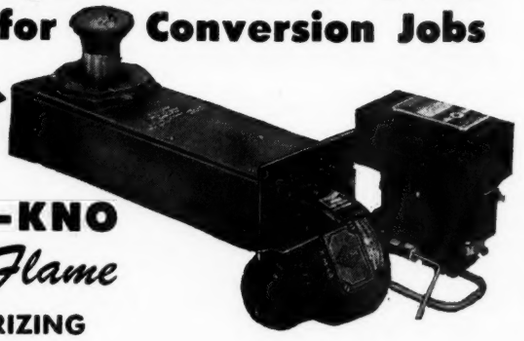
Safe, easy to use.
Just pour in fuel oil tank.

Size	Recommended Use		Per Case	List Price Per Case	Retail Price*
Pt.	Treats 125 Gal. Fuel Oil	After first application reduce by one-half	1 doz.	$15.48	$1.29
Qt.	Treats 250 Gal. Fuel Oil		1 doz.	27.48	2.29
½ Gal.	Treats 500 Gal. Fuel Oil		1/3 doz.	17.16	4.29
1 Gal.	Treats 1000 Gal. Fuel Oil		1/3 doz.	31.56	7.89

*Fair Trade Price Protected

ORDER NOW—in Case Lots for best discount.
G. N. COUGHLAN CO., West Orange, New Jersey

WARM AIR FURNACE BUILDERS AND DEALERS
Here's Just the Burner for Complete Furnace Units or for Conversion Jobs



KRES-KNO
Ball Flame
VAPORIZING OIL BURNER

Inquire about the new model BF60-SET, 1.0 g.p.h. capacity

Write for revised price sheet effective September 1, 1947.

KRESNO-STAMM MANUFACTURING CO.
General Offices—PALISADES PARK, N. J.

Factories in New York, N. Y., Palisades Park, N. J. and Hackensack, N. J.
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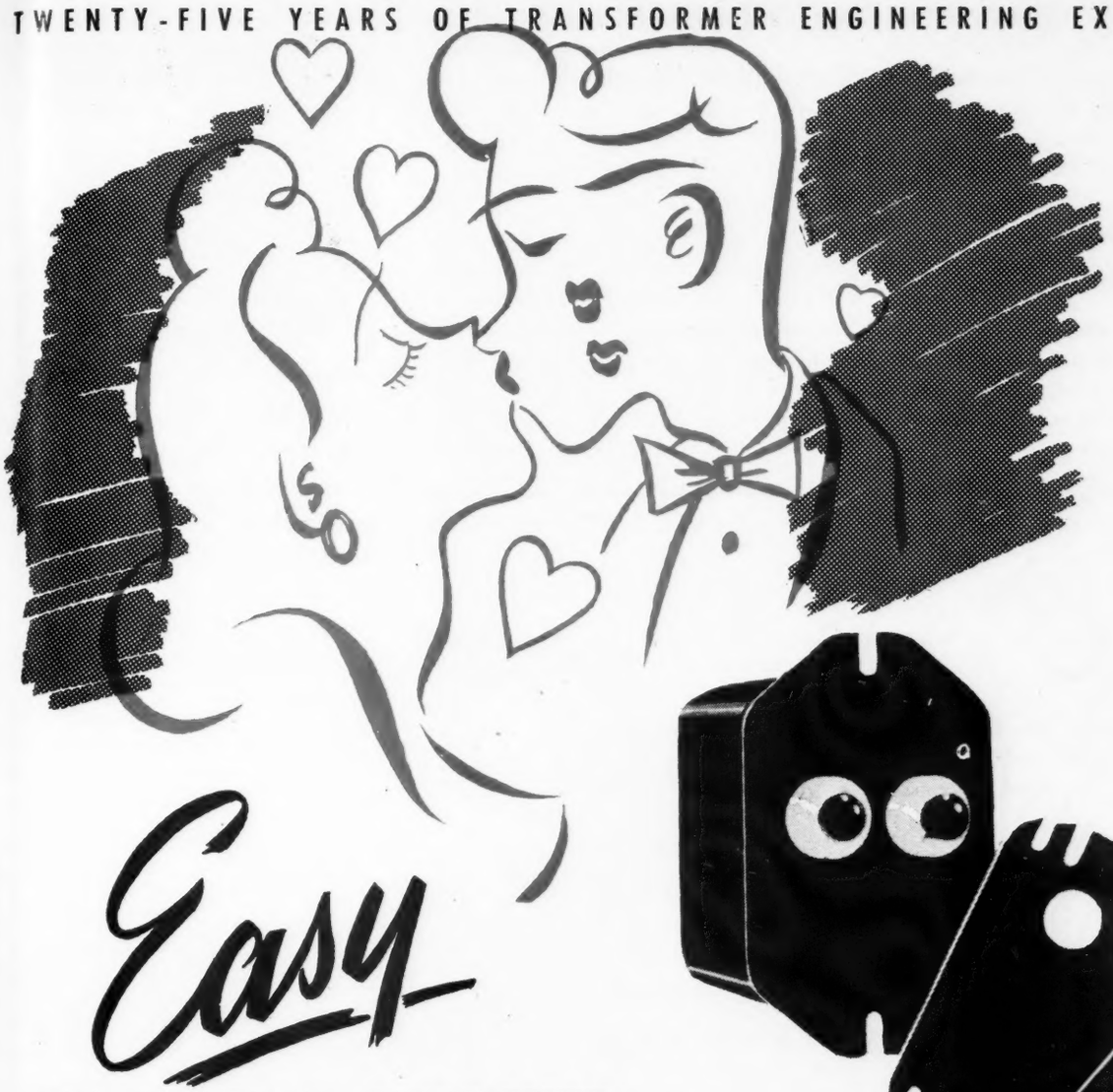
TWENTY-FIVE YEARS OF TRANSFORMER ENGINEERING EXPERIENCE

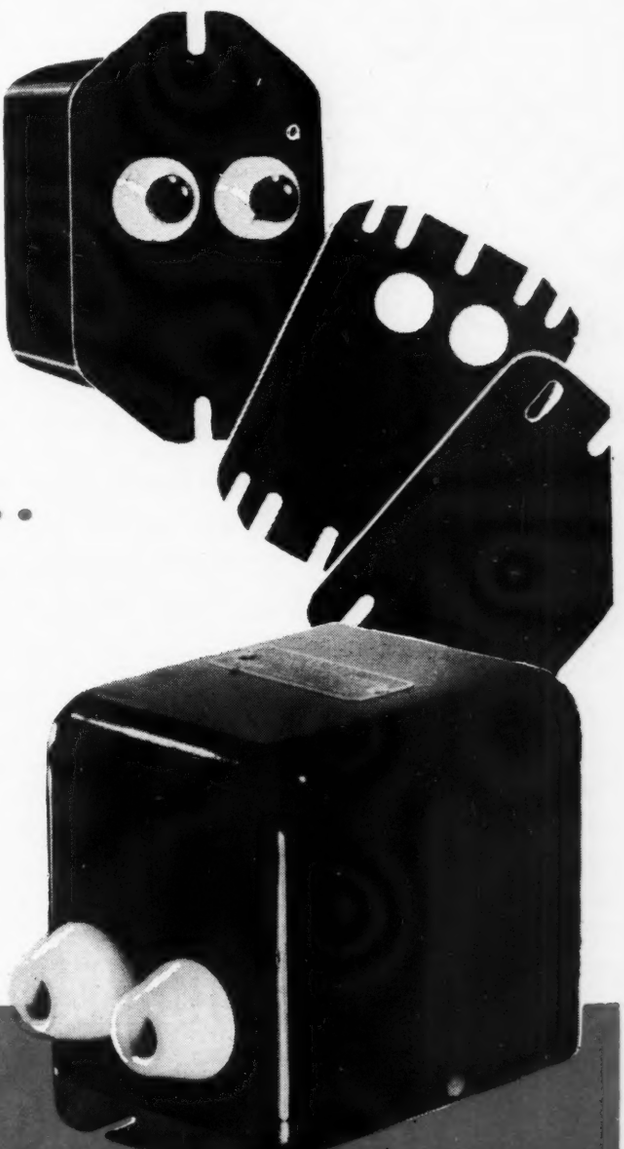


Easy

TO BECOME ATTACHED . . .

Yes, *easy*, because "NEWARK" mounting bases offer a complete variety of attaching methods and terminals. Whether standard or custom made, these fittings meet every rigid specification for oil-burner assembly. These two *external* connections are manufactured with the same care and quality found *inside* the famous "NEWARK" ignition transformer.

To meet all requirements of oil-burner manufacturers, "NEWARK" builds a complete line of ignition transformers including 110 and 220 volts, 50 and 60 cycles. Constant research and advanced designs provide moisture-proof construction, impregnated coils, and exclusive radio shielding. UL approved throughout.



NEWARK TRANSFORMER COMPANY

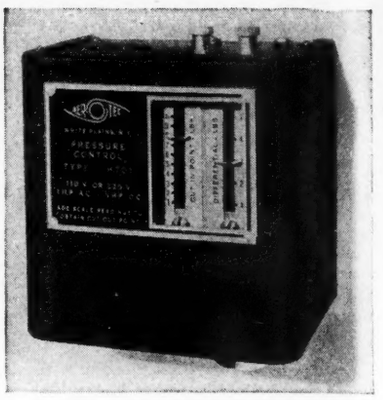
PARK AND LINDEN AVENUES, LINDEN, NEW JERSEY

a 6" flue opening. In operation, the furnace draws cold air from the floors of the house, passes it around the radiant heating section and back into the home. It will circulate and warm the air of an average 5-room house five times every hour, according to the manufacturer. The outer section of the unit is made of heavy galvanized steel, with a copper bearing steel combustion chamber, in which is fired the unit's vaporizing burner.

A thermostat control can be furnished with the furnace and a barometric draft control is supplied as standard equipment.

Aerotec Pressure Controls Are Fingertip Adjusted

EASY FINGERTIP ADJUSTMENT, in a range of 1-15 lbs., differential of 1-5 lbs., features H-701 pressure control, manufactured by Aerotec Corp. and placed on the market through their national distributor, Thermix Corp., Greenwich, Conn. The control has a minimum of moving parts and its heavy gauge steel construction is designed to take rough handling and to stand shock. The control, measuring 3⅝" x 3⅝" x 2½", may be mounted in any position. Frame is cadmium-plated and



cover bonderized to resist corrosion. Available for 110 v.—10 amp. or 220 v.—5 amp., single pole, single or double throw, normally open or closed. Underwriters approved for ½ hp. rating.

Correction

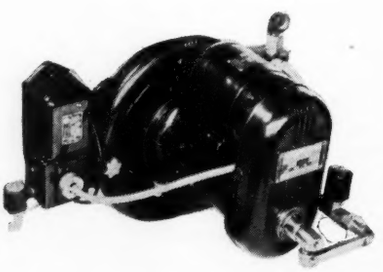
BUDDIE range burner wicks, through a typographical error, were reported as being made of 7/8" x 1/6" asbestos, page 169, September issue. Actually the wicks, produced by Buddie Products Co., Greenfield, Mass., are fabricated of 7/8" x 1/16" asbestos.

Offers Non-Contaminating Heat Exchanger Unit

A NON-CONTAMINATING heat exchanger, available through Lancaster Heat Transfer Co., Brooklyn 1, N. Y., reduces the hazard of contaminating boiler water or heating system with fueloil due to failure of oil carrying tubes in preheaters. The unit consists of a series of copper coils, through which is circulated cold oil for preheating, surrounded by city water supply, which serves as the intermediate heating medium. Heat from the boiler is introduced into the top of the unit into an outer chamber, circulates around and heats the city water supply and then returns to the boiler or condensate receiving tank through a bottom outlet.

Should the oil tubes fail, pressure would be created within the inner chamber containing city water and would be reflected in a relief valve installed below the water line. As a result, oil would be carried back to the oil storage tank. An optional hook-up will stop burner operation in case of tube failure and can include an alarm system.

LIEBLICH *
OFFERS YOU THE COMPLETE
5 & 6 COMMERCIAL
OIL BURNER
PACKAGE



Check these six outstanding
AVAILABLE FEATURES

1. 5 or 6 oil Horizontal Rotary Oil Burner
2. Four controls
3. Steel front plate cut to sketch
4. Approved Oil Heaters from our stock
5. Any other Heavy Oil specialties you require
6. Complete Engineering assistance, layout, and designs

* With its 40 Years Experience in the Heating Field.

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OIL BURNERS
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OIL BURNER CONTROLS
WEATHER CONTROLS
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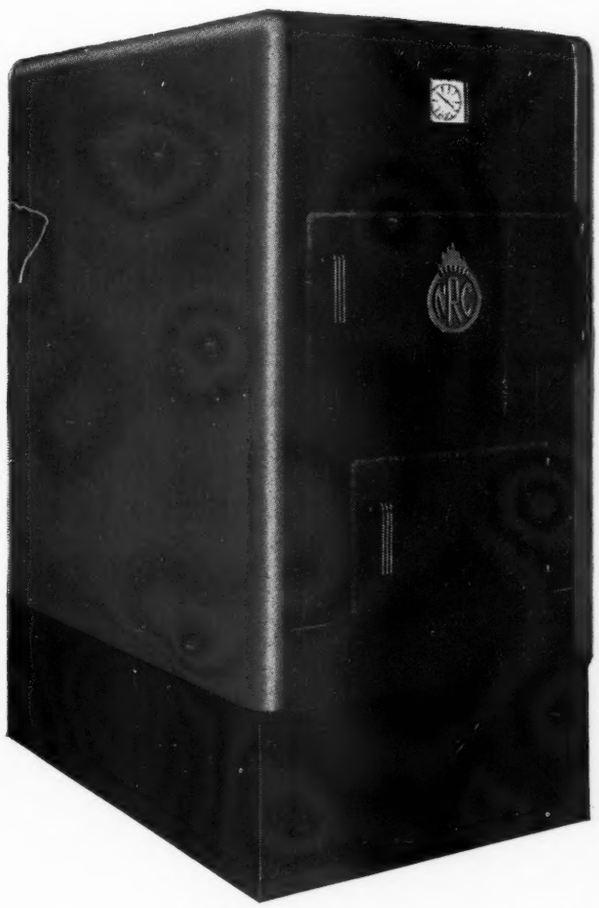
TANK GAUGES
24 HOUR SERVICE
COMBUSTION CHAMBERS
VIOLATIONS REMOVED

LATEST ADDITION TO A DISTINGUISHED FAMILY

A NEW LINE
of NATIONAL Residential STEEL BOILERS!

Designed specifically for homes, smaller apartments and small commercial installations. National Residential Steel Boilers are available in 13 sizes ranging in rating from 275 to 3,000 square feet of steam radiation.

This new line of National Residential Steel Boilers embodies the most modern engineering practice for design and production of boilers for mechanical firing. Here are a few of the reasons why you'll be proud to specify "National"—



√ **FAST, DEPENDABLE HEATING** with multi-tube construction that more effectively brings hot gases and water in contact with heating surfaces.

√ **FUEL ECONOMY**—through the use of modern engineering design—turbulator tube baffles and more generous insulation of jacket and doors.

√ **LOW INSTALLATION COST**—boiler and platework are factory-assembled as a unit. Easy handling through small doorways eliminates costly building changes.

√ **LONG, TROUBLE-FREE LIFE** is assured through high-grade flange quality steel construction and genuine Electrunite tubes. Design and construction meet all requirements of the Steel Boiler Institute Testing and Rating Code, and the American Society of Mechanical Engineers' Boiler Construction Code. All boilers are inspected during construction by a representative of The Hartford Steam Boiler Inspection and Insurance Company. These features add up to a quality product. Specify nothing less! Many makes of boilers do not meet these requirements.

√ **DOMESTIC HOT WATER SUPPLY**—year 'round, is available with storage or tankless heaters covering a wide range of capacities to meet requirements of homes, smaller apartments and small commercial installations.

√ **SMART STYLING** with a handsome flame-red jacket and contrasting crinkle-cast black platework.

Contact your nearest Heating Contractor, your NRC heating sales branch or write to The National Radiator Company, 221 Central Avenue, Johnstown, Pennsylvania, for full product information.

NRC

The NATIONAL RADIATOR Company
JOHNSTOWN, PENNSYLVANIA

fuel oil & oil heat

Imperial Studies Demand In Canadian Expansion

EXPANSION of the Imperial Oil, Ltd., refinery at Eastern Passage, Halifax, N. S., will depend largely on conditions becoming more stable and the source of future demands, Henry H. Hewetson, president has revealed.

Admitting that Canadian refineries of the company could not meet the demand for oil fuels of various types, Mr. Hewetson revealed that up to September 18, the company had imported through Halifax alone 73,750,915 gallons of finished products, and that the figure for Canada as a whole was nearly four times that amount.

To meet the situation in Canada the company purchased the wartime refinery installation at Whitehorse, Alaska, and had it moved to Edmonton, Alberta, said the president. Other additions to present refineries would depend largely on where the country's greatest demands continued to exist, he said, indicating that he expected the 46,000,000 barrels of fuel estimated to be consumed this year would rise to 55,000,000 barrels by 1950.

The company is spending between $50,000,000 and $60,000,000 in Alberta hunting for oil, revealed Mr. Hewetson. One major find, with a potential reserve of more than $50,000,000 barrels had already been discovered south of Alberta and this reserve may be enlarged as drilling operations proceed, he added.

The company is into a big period of spending, and to meet the increased demands in the past year has purchased five ocean tankers, is about ready to launch one of two canal-size tankers being built at Collingwood, Ont., and has a lake-size tanker building there.

The president also revealed that the company was considering enlarging the Portland pipe line, between Portland, Maine, and Montreal to help ease the situation. The line, he said, was now being used to pump stove oil to Montreal to meet the jumped-up postwar demand created by wholesale installations of oil heating units.

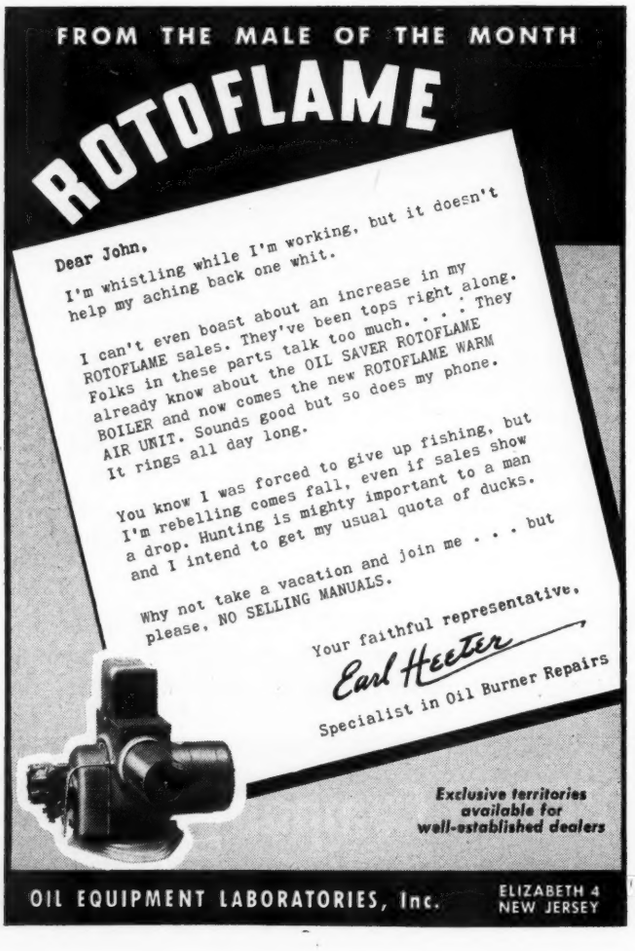
The 73,000,000 gallons of fuel being imported through Halifax include 33,000,000 gallons of stove oil and 16,000,000 gallons of furnace and diesel oil. To meet requirements another 13,000,000 gallons of fuel would be imported into Halifax.

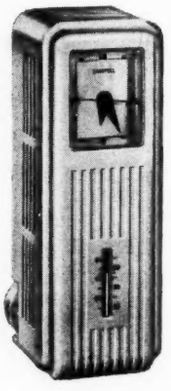
Warning home owners against installations of oilheating units until the fuel situation eased, Mr. Hewetson pointed to a recent breakdown of pumping facilities at the Eastern Passage refinery as an example of how serious the situation has become. "The supply and demand is almost so evenly balanced that the short shutdown of pumping facilities almost resulted in a shortage here," he declared.

◈

Richard M. Barnes has been named northeast sales and service manager for Dravo heaters, according to Dravo Corp., Pittsburgh. He will make his headquarters with Emerson-Swan, Inc., at Boston.

E. W. Meyers, Jr., has been elected president of Trion, Inc., manufacturers of an electrostatic air filter, replacing Paul W. Aitkenhead, who has resigned to become chairman of the board. Mr. Meyers formerly was with Rockwell Mfg. Company.


FROM THE MALE OF THE MONTH
ROTOFLAME
Dear John,
I'm whistling while I'm working, but it doesn't help my aching back one whit.
I can't even boast about an increase in my ROTOFLAME sales. They've been tops right along. Folks in these parts talk too much. . . . They already know about the OIL SAVER ROTOFLAME BOILER and now comes the new ROTOFLAME WARM AIR UNIT. Sounds good but so does my phone. It rings all day long.
You know I was forced to give up fishing, but I'm rebelling comes fall, even if sales show a drop. Hunting is mighty important to a man and I intend to get my usual quota of ducks.
Why not take a vacation and join me . . . but please, NO SELLING MANUALS.
Your faithful representative,
Earl Heeter
Specialist in Oil Burner Repairs
Exclusive territories available for well-established dealers
OIL EQUIPMENT LABORATORIES, Inc.
ELIZABETH 4 NEW JERSEY



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A Complete Line of Quality Controls

There is a complete line of proven, dependable Sampsel controls for finer performance, easy installation, and freedom from servicing. Write for illustrated catalog.

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AUTOMATIC CONTROLS

Canadian Sales Distributor: PEASE FOUNDRY CO., Ltd., Toronto 1

Independents' Share Up, Dunlop Asserts At N.P.A.

TRENDS in the oil industry have been away from economic concentration during the past 36 years, Robert G. Dunlop, president of Sun Oil Company, declared September 18.

He spoke at an annual meeting of the National Petroleum Association on opportunities for small companies in the oil business.

Citing figures to disprove recent charges of concentration, Mr. Dunlop asserted competition in the industry is keeping the door "wide open." He termed "preposterous" the implication that a score of companies are using their combined resources as a single unit against the remaining 34,000 oil companies which comprise the industry today.

"The trouble with the people who make such contentions is that they suffer from optical illusions as a result of looking backward—and through the wrong end of their spy glasses at that," he said.

These people, Mr. Dunlop contended, seem unable or unwilling to recognize the fact that the Standard Oil Trust was dissolved in 1911, and the trend of the industry has been toward vigorous competition ever since.

Seven years prior to the dissolution of the old Standard Oil Trust, its member companies alone had combined runs of crude oil to stills equal to 84.2 per cent of the total for the industry, Mr. Dunlop said. Last year, a total of 30 companies had runs to stills equal to 82 per cent of the industry total, and no single company had runs to stills greater than 11 per cent.

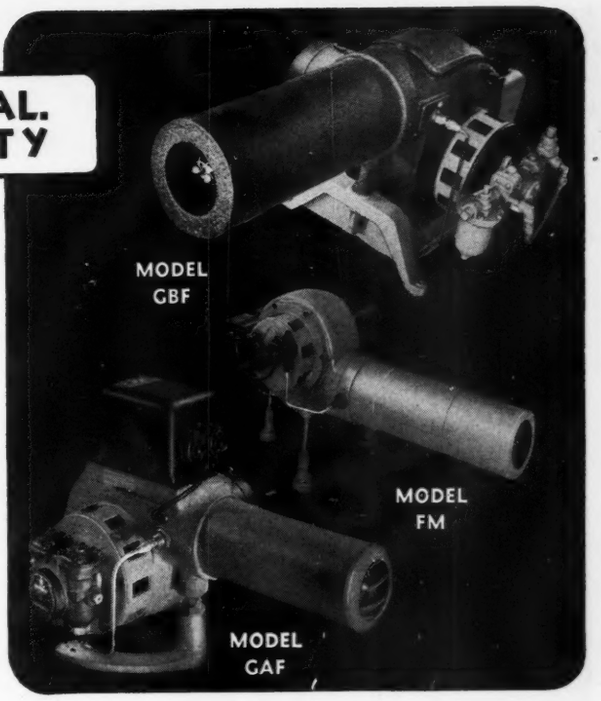
Mr. Dunlop said it is often claimed by those seeking to prove economic concentration in the oil industry that the so-called "Standard companies" act in concert. He declared there is abundant evidence, however, to show they are vigorous, if not bitter, competitive rivals. Even so, the total crude runs to stills of eight so-called "Standard companies" equalled only 39.02 per cent of the industry total in 1944, while runs to stills of 13 other companies amounted to 44.49 per cent.

"Surely, there again, even on the fallacious assumption used by our critics, is evidence that economic concentration has grown less, rather than increased," Mr. Dunlop said.

He also quoted the annual 30-company

1 to 20 GAL. CAPACITY

CHECKS FIRST *with the* FINEST



AMERICA'S MOST COMPLETE

CONVERSION LINE

The GENERAL AUTOMATIC GBF Burner is designed for stores, churches, theatres, apartment houses and factories. Dual atomizer. Cap. 8 gals. per hr. Combustion is clean, quiet and thorough. Operating costs compare favorably with those of coal burning furnaces. Time tested in hundreds of commercial installations. Extremely economical and dependable.

The GENERAL AUTOMATIC FM Burner is designed for large stores, churches, buildings, factories where trouble free unattended automatic heat is necessary. Thirteen years of dependable operation back it up. Three sizes handling from 8 to 20 gals. per hr. Dual Atomizer.

The GENERAL AUTOMATIC GAF Conversion Burner is designed for dependability and economy of operation in home installation. Single atomizer. 3 gal. per hr. capacity. Carefree clean oil heat for private homes and small commercial installations at minimum cost.

GENERAL OIL BURNER CORPORATION
2300 Sinclair Lane, Baltimore 13, Md.

study of Joseph E. Pogue, vice president of Chase National Bank, showing slight change over a 12-year period in the relative position of the large companies, as a group, to the industry as a whole, in crude oil production. The Pogue report found the situation essentially the same in the refining end of the business.

The Pogue report, Mr. Dunlop added, called attention to the fact that "an exceptional lack of concentration is indicated for the petroleum industry."

"Today we hear a great deal that size, and size alone, is the evil—the detriment to our economy," Mr. Dunlop said. "Such is not the case. Let us never forget that the framers of our anti-trust laws directed their attention to the abuse of size and power, and that such abuse included an intent and an act to restrain trade and eliminate competition.

"Truly our courts have gone a long way beyond that objective with their recent decisions indicating that size alone, with a complete absence of intent or act to abuse, is, in effect, monopoly, and accordingly penalties should be improved."

All of the large oil companies of today started from scratch, he pointed out, and "their growth and survival demonstrate they have been serving the public welfare."

Referring to advantages of the small company in the oil industry, Mr. Dunlop said, "The world is his oyster." He pointed out that small operators have greater flexibility and better opportunity to develop human relationships and well-rounded executive talent.

"Oil's door of opportunity remains wide open for those who are willing to work and compete to attain a place in this industry," he said, and "there is no better place to undertake a new venture than in the very shadow of a large corporation's undertakings."

Mr. Dunlop assailed attempts to split the oil industry into warring, contentious factions by characterizing all but the 20 largest integrated units as "independent" companies. Each of the 20 companies referred to is as fully independent in every true sense of the word as any of the others, he said.

"The term more often than not is used as a propaganda word to attract adherents to a cause that frequently has nothing to do with independence," he asserted.

The real concern of the oil industry today, he said, is the preservation of an atmosphere in which men with capacity are attracted to the industry and given an opportunity to develop capacities. For it is in this way, he continued, "that our industry may continue to be an instrument of service to the public—regardless of the sources or types of raw materials which may be available to us."

"Actually," he said, "the great resources of the petroleum industry are not the 24 billion barrels of crude petroleum and condensates in known underground reserves, not the 160 trillion cubic feet of natural gas available to the industry, nor the great refineries, transportation systems or marketing facilities.

"The real resources of the petroleum industry are the manpower and personnel of the individual enterprises and the corporations that make up the industry."

◈

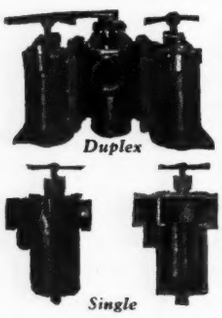
Allocate 30 More Tankers

THIRTY MORE TANKERS have been allocated by the Maritime Commission to oil companies and tanker transportation groups. All 30 are to be American registered, but five others are to be of Panamanian registry.

KRAISSL
FILTERS
STRAINERS
PUMPS
Keep Fuel Oil Lines Open and Active

Year-in, year-out performance proves the skill of KRAISSL engineering design and the honesty of KRAISSL manufacture.

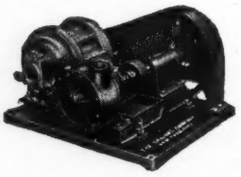
Class 72 Strainers and Filters



Single and Duplex types for suction or discharge service — any practical degree of filtration in units designed for low pressures as well as up to 500 lbs. hydrostatic test—easily removable filter basket insures quick cleaning.

Class 60 Heavy Oil Pumps

Standard equipment wherever independent pump and motor sets or booster pumps for pump-type burners are required.



Submit your fuel-line problems to KRAISSL engineers—literature and prices on request.

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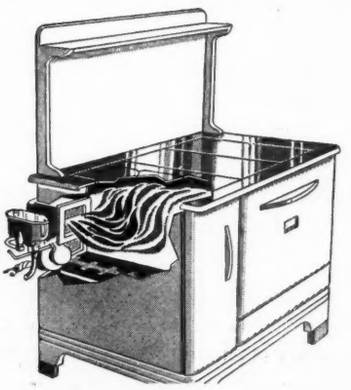

SALES prospects for this modernizing, easily installed oil burner are *all* owners of gas, wood and coal stoves and ranges. Super-Therm fits any size stove, front or rear —will last a lifetime—will not soot or smoke—has automatic safety features. Write now for details and *dealer profit* facts.

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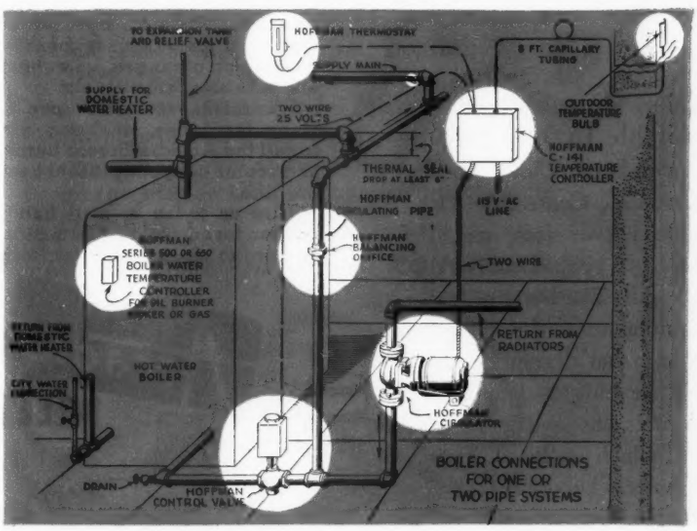
HOFFMAN C-141
HOT WATER
Comfort Package

A POPULAR PRICED CONTINUOUS CIRCULATION SYSTEM . . . *THERMOSTATICALLY CONTROLLED*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8 FT. CAPILLARY TUBING
SUPPLY MAIN
SUPPLY FOR DOMESTIC WATER HEATER
TWO WIRE 25 VOLTS
OUTDOOR TEMPERATURE BULB
HOFFMAN C-141 TEMPERATURE CONTROLLER
THERMAL SEAL DROP AT LEAST 6"
HOFFMAN CIRCULATING PIPE
115 V-AC LINE
HOFFMAN SERIES 500 OR 650 BOILER WATER TEMPERATURE CONTROLLER FOR OIL BURNER BURNER OR GAS
HOFFMAN BALANCING ORIFICE
TWO WIRE
RETURN FROM RADIATORS
HOT WATER BOILER
HOFFMAN CIRCULATOR
BOILER CONNECTIONS FOR ONE OR TWO PIPE SYSTEMS
DRAIN
HOFFMAN CONTROL VALVE

HOFFMAN C-141 CONTROLLER: Automatically maintains indoor comfort and temperature by combining Room Thermostat control with continuous circulation of the heating medium.

HOFFMAN CIRCULATOR: Continuously circulates the heating medium throughout the heating season. Automatically stops with the end of the heating season and starts again in the fall when heat is required.

HOFFMAN CONTROL VALVE: An especially designed valve to keep the hot water in the heating system at the desired temperature to maintain heating comfort.

HOFFMAN BALANCING ORIFICE: Engineered to maintain proper balance between the circulating pipe and boiler circuit.

HOFFMAN ROOM THERMOSTAT: Heat anticipating thermostat adjustable to slow, medium and fast cycles.

The Hoffman C-141 Comfort Package offers *precisely controlled heating*—yet the cost is within the budget of even modest homes.

The uniformity of a *continuously circulated* forced hot water heating system can now be obtained with simplified and inexpensive equipment. The new Hoffman C-141 Comfort Package combines a Circulating Pump, Temperature Controller, Control Valve and Room Thermostat.

In operation, the C-141 Comfort Package effects a constant balance between heat loss and heat supply, so that the home temperature is held uniform, regardless of weather variations. Note in the diagram that the boiler is by-passed from the rest of the circulating system. Hot water from the boiler is admitted *only* when the room thermostat requires additional heat. Hence the system keeps pace with the actual need for heat and never delivers a fuel-wasting excess.

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SPECIALTY COMPANY

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MAKERS OF VALVES, TRAPS, PRESSURE REDUCING VALVES, TEMPERATURE REGULATORS, VACUUM AND CONDENSATION PUMPS, FORCED HOT WATER HEATING SYSTEMS . . . SOLD BY WHOLESALERS OF HEATING AND PLUMBING EQUIPMENT.

Fueloil c oil heat

Jersey Standard In A World-Wide Program

STANDARD OIL COMPANY (N. J.) and its affiliates throughout the world are in the midst of one of the greatest expansion programs in the company's history according to *The Lamp*, company publication.

With current facilities operating at top capacity the program will include extensive exploration and drilling, increased refinery capacity and additional pipelines. Some of these projects already have been completed, and barring unforeseen delays, most will be finished by 1951.

Postwar oil demand was expected to drop sharply after war requirements were cut back, but instead they climbed to an all-time high. Economists estimate that by 1951 the industry will be asked to provide for world demand of nearly three and three-quarter billion barrels of crude and products annually, a 35% increase over 1945.

Realizing the first step in supplying oil needs is to get the oil out of the ground, Jersey's domestic affiliates alone will spend $121 million on producing activities in 1947.

◈

Warm Air Manual Covers Jobs Larger Than 120,000 Btu

MANUAL NO. 9 of the Technical Code of the National Warm Air Heating and Air Conditioning Association has been issued to cover installation in buildings of more than 120,000 Btu heat loss. It is known as the Classroom Edition.

The new manual consists of five short Procedure Sections and eight tables for a total of eleven pages. There are three work sheets used in connection with work done under the code; one which calculates heat loss, two which are used in sizing duct work and registers.

◈

Ronci Conversion Burners Available In Two Sizes

GUN TYPE conversion burners, developed by Ronci Machine Co., Centredale 11, R. I., are available in two sizes—model RIA-5 rated from 1 to 2 gph; model RIA-6, from 2 to 2.75 gph. The burners feature a cast aluminum housing and base and are constructed so that all components are accessible for cleaning and maintenance. Standard parts are used in fabricating the burners, which are listed as approved by Underwriters Laboratories under Commercial Standard CS 75-42.

◈

Norman Products Stresses Burner Features At Meeting

IN AUGUST forty-two distributors attended the second annual sales meeting of Norman Products Co., held at the factory in Columbus, Ohio. The distributors saw demonstrations of the Norman vaporizing oilburner operating in a furnace and boiler and heard Harry Gibbard, chief engineer, outline the improved hydroxylating principle of the burner. He discussed also the new, patented Norman pilot air damper control feature, which thermostatically adjusts pilot air by closing the damper when the burner is on pilot and opening it when thermostat calls for heat.

The conference included sessions on August 15 and 16, under the supervision of E. A. Norman, Jr., president and Don Piper, executive vice president in charge of sales.

NEW! PEMCO

Tamper-Proof . . .

Time-Saving . . .

Storage Tank Fittings

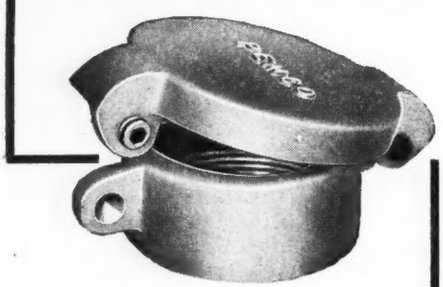


Figure 71AK

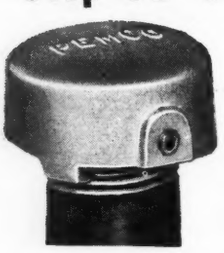
Aluminum FILL BOX

With ⅜" ALLEN SOCKET SET SCREW

This hinge type Fill Box can't break because it's made of durable cast aluminum. No lock is required. Available in 2" size only. Allen Keys supplied extra.

New Design! Larger Venting Area!

Slip-On Vent Cap



Cast Aluminum

Has 10-24 Allen Socket Set Screw. Fits standard pipe with or without thread, from ¾" to 2". Allen Keys extra.

Figure 12

Export Dep't.: 44 Whitehall St., N. Y., U.S.A.
Canada: Industrial Spec. Co., Weston, Ont.

Buy from Your Jobber or Write Direct

PEMCO

PETROLEUM EQUIPMENT MFG. CO.

75 BREWSTER ST., NEW HAVEN, CONN.

DISTRIBUTORS and DEALERS !

new franchise plan for the dependable

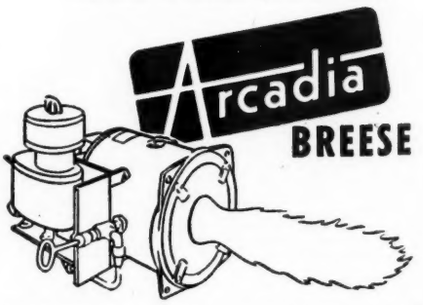
ARCADIA - BREESE

Horizontal Oil Burners

These Horizontal Oil Burners (for ⅔ to 1 gph) carry on the Breese tradition for superior, trouble-free products. They are now further improved for quick inexpensive conversion of ranges, water heaters, furnaces, arcolas, etc.

Franchises are still open in many territories, enabling you to sell the Arcadia-Breese Burner and round out your present heating line.

Wire us today or mail handy coupon for complete information. Be sure to outline your territory.



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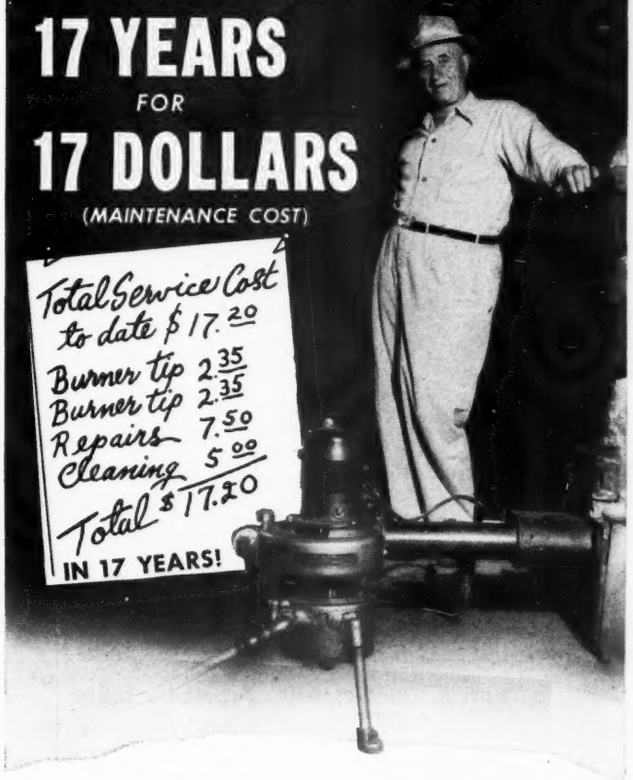

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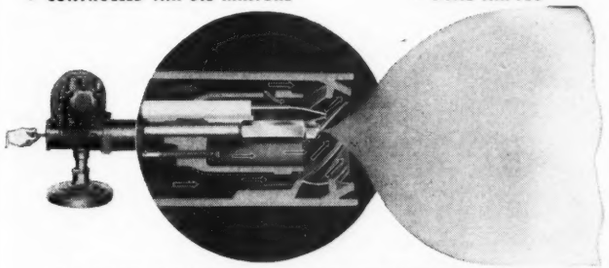

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RUDY FURNACE COMPANY

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Reader's Problems

Q. Spring and early fall, our K-System for automatic fueloil deliveries is much less accurate than in mid-winter, and this runs up our delivery costs by making 200 gallon drops impossible for most deliveries to 275 gallon tanks. We are following all your instructions on operating the system but still have this trouble.

I.G.S., *Philadelphia.*

A. While use of the K-System for making automatic fueloil deliveries reduces delivery costs greatly during most of the heating season and especially during the cold months when the most fueloil is used, unfortunately the system does not produce the same economies in spring and fall as it does during cold weather. The reason for this is there is no way of telling from your office, on a chilly fall morning when, for example, one-third of your customers are using oil for heating and two-thirds are not, which of your customers are using the oil. During a chilly week near the end of September, one of your customers may use 25 gallons of oil for heating because his thermostat stays set at 75° and his house chills quickly. The next-door neighbor of this customer may have a house which chills slowly and may keep his thermostat set at 70°, therefore may use no oil for heating during the same week.

You probably can gain some improvement in the operation of your automatic delivery system by (a) looking over the delivery records of previous years when you plan your spring and fall deliveries, and finding out which customers use little and which use much oil at the ends of the seasons, and (b) making certain to obtain dependable data on the amount of oil in each customers tank between Sept. 1 and Oct. 1, even though you may not make an oil delivery during September, and may have to telephone the owner for information on how much oil is in his tank, or send out a fueloil salesman or oil truck driver to a certain few homes to obtain the information.

* * *

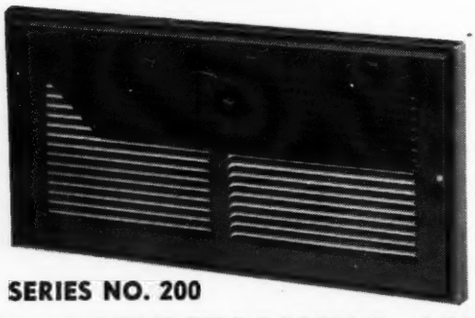
Q. How can you tell whether to use a "hollow-spray type" or "full-spray" atomizing nozzle on a certain job?

D.G.T., *Albany, N. Y.*

A. Try both types of nozzles on the installation, making complete combustion tests and studying the sound, appearance, and clean-burning properties of the fires. You will inevitably wind up with a preference for one nozzle or the other.

* * *

Q. Firing a 20" grate diameter, six-section round cast-iron boiler by a 1.50 nozzle gives a stack temperature over 700° but heats all the steam radiators 30 minutes after the burner starts on a cold morning. Nights, the boiler is 160° for water heating, giving it that much head start Firing a 1.25 nozzle gives a stack temperature of 630° but slower heating of the radiators on chilly mornings. It's 45 min-

EFFECTO-GRILLE
Beauty and Performance COMBINED

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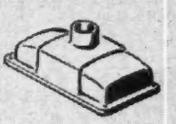
Here's Superiority of Design and Workmanship So Evident *You Can Show It to Your Customers*

Yes, Heil gives you sound, solid evidence of skilled engineering, of careful craftsmanship that you can actually point out and prove to your customers. There's no need to take anybody's word for the dependability that's built into the new Heil units.

For every point of proof you see at the right, there are a dozen more. And every feature brings further value—adding efficiency, smooth quiet operation, ease of installation and service, and all-around sound engineering. When you show this to your customers with Heil—you *sell them.*

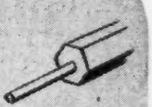
sturdy cast bases

The bases on Heil Conversion Burners are rugged, solid castings. They provide a firm footing, yet may easily be adjusted for height and leveling.



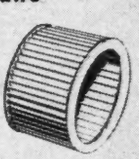
bus bar ignition lines

Heavy, rigid copper bus bars carry the high voltage ignition current in all Heil burners. The reliable ceramic insulation brings none of the problems of flexible cables.



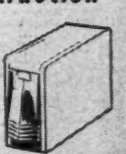
balanced burner fans

The burner fans are sturdy, and free from rattles. Careful balancing of the fans insures quiet, vibration-free operation.



welded unit construction

Heil uses spot welding, shielded-arc welding, and seam welding to give Heil units strength and tightness that endures for years.



inspected-approved boilers

Heil boilers are built to the specifications of the Steel Boiler Institute, and then inspected thoroughly and approved by a Hartford Boiler Inspector.

baked-on airplane finish

Even the finish on the new Heil units is tough and hard enough for use on army planes. It is infra-red baked in modern ovens.

IT'S HEIL FOR EASIER SALES AND BIGGER PROFITS

Heil's new oil-fired units have every feature you know you need to sell—and every feature is a substantial point that really *means something.* Only an organization with a quarter century of experience in oil-fired heating could give you such engineering, performance and styling. And to back it all up, Heil adds a complete, hard-hitting merchandising program, for a profitable franchise that will help you go places.

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Company .....

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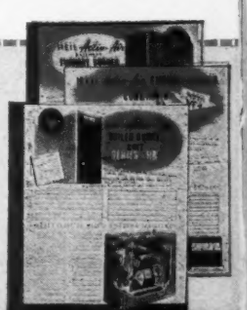
City..... Zone.... State.....



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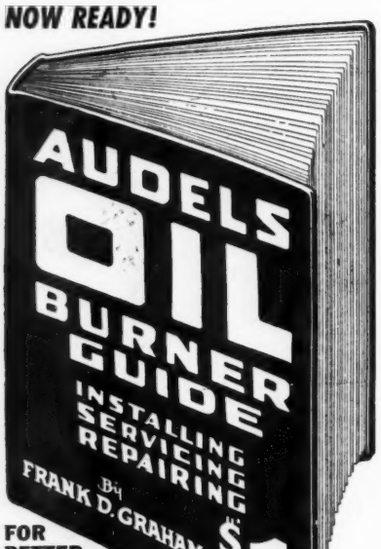

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Employed by_____ 08-7

utes before all the radiators are heated fully, sometimes even an hour. Which nozzle would you use?

W.M., *Youngstown, Ohio.*

A. Heating all the steam radiators within 30 minutes of starting the burner seems to be heating them unnecessarily rapidly, and together with the stack temperature of over 700° indicates that 1.50 gph is excessive firing for this heating plant. You will gain fuel savings by using the 1.25 nozzle. Teach the home owner that 45 minutes is not too long to wait for all the radiators to heat fully. You should install a clock thermostat to start the burner 45 minutes before the occupants arise mornings.

* * *

Q. To run a blower in the proper direction, we are using a crossed belt. I am unfamiliar with motors, but am told that this is a split phase motor and the direction of rotation of the shaft can be reversed easily to do away with the necessity of crossing the belt. How can the motor be made to run the other way? Only two wires come out of it, and reversing these does not change the motor direction.

S.M.D., *New York.*

A. The direction of shaft rotation of a split phase motor can be changed easily. Take off the end bells of the motor, find the connections of the starting winding or the running winding, and reverse one set of connections. To play safe since you are not familiar with motors, we suggest you call in a motor specialist to do this, or take the motor to a motor repair shop.

* * *

Q. We have installed a burner in a new H. B. Smith water tube boiler #44-9H. We are using a 16" smokepipe, 16" draft regulator, combustion chamber of firebrick 35" x 26" built up to firedoor level. The job is fired with two 4.5 gph 60° nozzles. This is a one pipe steam job equipped with domestic hot water.

It works fine except for a pulsation while running. This pulsation shakes the floor of rooms directly over the boiler. The chimney gives a .04" draft over the fire and a .06" draft in the smokepipe. The baffles in the flue passages are wide open. How can we stop the pulsation? Thanks.

I.P.S., *Herkimer, N. Y.*

A. One of these commonly-used remedies for pulsating fire should cure the trouble on the installation you describe:

your most dependable source

BRASS FITTINGS

a complete line of brass fittings for copper tubing installations for gas and oil line use

BRASS FITTINGS OF MERIT CS

write for catalog H

C-S

BRASS MFG. CO.

148 West 62nd St. New York 23, N. Y.

Circle 6-5249

1. Simply try continuous-ignition for the burner; wire the ignition transformer in parallel with the oilburner motor. This may end the pulsation.

2. If you can obtain them, try out different air-handling parts for the end of the gun tube and the inside of the gun tube. In your efforts to obtain suitable parts, write to: Monarch Mfg. Works, Inc., East Westmoreland and Salmon Sts., Philadelphia 34, Pa., and Eddington Metal Specialty Company, P. O. Box K, Eddington, Pa.

3. Check thoroughly on the dimensions of the firebox. The nozzle height may be excessive, or the firebox may be too long. Therefore, try: (a) Increasing the height of the firebox floor by laying loosely (for trial) a 2½" thick layer of firebrick on the floor of the present firebox. Make certain, however, that you do not cause the nozzle to be so close to the firebox floor that carbon builds up on the floor because oil impinges there; also try (b) shortening the firebox, temporarily for trial, by building up a 4½" wall inside and in contact with the present back wall of the firebox.

Use light-weight insulating firebrick for trying (a) and (b), above.

Providing a corbel effect for the back wall might help; add firebrick to this wall, stepped inwards over the fire. Similarly, an arch sometimes is added to the front wall; it would extend over the fire.

4. This often proves to be a very inexpensive and highly effective remedy. It probably will do the trick and solve your problem completely, if the pulsation stops when you keep the firing door of the boiler open about half an inch. Here's the trick. Simply provide auxiliary-air openings in the front wall of the firebox, close to but somewhat lower than the gun tube of the burner. For this installation, we suggest that you insert in the front wall of the firebox two pipes, each a standard 2" pipe size, to permit boiler-room air to flow into the firebox.

Flame and oil vapor may belch out of such auxiliary-air openings when the burner starts—especially at times of low chimney draft. If that happens, fit the two 2" pipes with small, free-fitting check dampers that can open only inwards (they will remind you of the discs of certain draft regulators) or pack the pipes with very loose rock wool, held in place properly by wires which run through

New H. C. LITTLE "Thermatic" Burner Door

Solves Problem of Establishing Draft Under Cold Starting Conditions

H. C. Little has made a new addition to their automatic oil burner. This added feature is so very important that it will be a big additional sales asset to every H. C. Little dealer.

This new feature, descriptively named a "THERMATIC" door, will hereafter be included on all H. C. Little oil burners. Operating automatically and controlled by temperature changes, the new "THERMATIC" door gives the H. C. Little oil burner amazingly good starting characteristics, even under the most adverse cold starting conditions.

FANS AND BLOWERS NOT NECESSARY

The H. C. Little "THERMATIC" door easily and efficiently solves the cold starting problem *automatically* by permitting a relatively large amount of air to enter the burner while it is cold, then gradually reducing the air intake to normal as the burner warms up. NO motor-driven fan or blower is employed.

AMPLY TESTED BEFORE INTRODUCTION

Before the actual introduction of the "THERMATIC" door, numerous laboratory and field tests were made. These conclusively showed that the H. C. Little "THERMATIC" door definitely solves the problem of establishing draft under cold starting conditions without the use of complicated motor-driven mechanisms and with the further assurance that this new feature will not require any attention, even over very long periods of time.

For further information, contact your nearest H. C. Little Distributor, or write to:

H. C. Little BURNER CO.

San Rafael, California

BRANCHES IN 18 PRINCIPAL CITIES

holes drilled in the pipes. Use screening, held in place by wires, to help keep the rock wool in place.

* * *

Q. 1. Is there a way to figure steam radiation or boiler horsepower from the number of pounds of steam per hour output from a boiler?

2. A steam boiler that was designed for high pressure work, say 100 lbs., and is then used for heating, say 10 lbs., does the boiler capacity increase? If so, by how much?

3. Do you advise using a boiler that was designed for high pressure work for a low pressure heating system?

B.S.O., *Jamaica, N. Y.*

A. 1. To figure steam radiation or boiler horsepower from the number of pounds of steam per hour from a boiler:

a. One boiler horsepower is equal to the amount of heat needed to evaporate 34.5 lbs. of water per hour, from water at 212° to steam at 212°.

b. If you know the number of pounds of steam produced per hour, on a basis of water at 212° and steam at 212°, simply divide by 34.5 to arrive at the figure for boiler horsepower. If the basis is not 212° water and steam, you must use steam tables to arrive at an accurate answer.

c. If about 70° efficiency can be expected with the boiler oil-fired, then firing one gph will produce about three boiler horsepower.

d. You can figure roughly that for each gph it is fired, the boiler will carry about 300 to 400 sq. ft. of standing steam radiation load.

2. The capacity of a boiler increases slightly, with the boiler working at lower steam pressure, because at lower steam pressure the boiler is cooler. Water boils at a lower temperature at the lower pressure. The basis of this is that in defining the capacity of the boiler, you may indicate it is to be fired so hard as to produce a certain stack temperature, for example 600°. Without tests of the particular boiler, it is impossible to say just how much (on a basis of maximum stack temperature) the capacity of a boiler will be increased by running it at a lower steam pressure. Offhand, dropping the pressure from 100 lbs. to 10 lbs. may permit the boiler to be fired about 5% harder without increasing the stack temperature over what it was at the higher steam pressure.

3. A power boiler should work out exceptionally well when used for low pressure heating. The reason for this is that usually a power boiler is well designed

* * *

Q. Following instructions we have read several times, including instructions from the burner manufacturer, we are trying to run a burner with very low over-fire draft. We obtained a draft gauge. It shows minus one over-fire. But the owner complains of choking, smoky fueloil odors in the basement. Also, the compartment of the boiler jacket, in which the burner stands, has lots of soot in it. What do you suggest? We find it impossible to obtain more draft.

H.T.M., *Detroit.*

A. Plainly, the products of combustion are escaping from the boiler through air leaks or gas leaks. The design and construction of the boiler may be poor, giving these leaks. In any event, you can improve the operation by locating the leaks which permit the products of combustion to escape from the boiler, and doing a thoroughly good job of sealing these leaks permanently. If you make the boiler absolutely air-tight, there will be no soot or

get rid of the "cold room" problem!

WITH THE Gorton SYSTEM of Vaporizing and Equalizing Valves

THE GORTON SYSTEM . . . gives automatic even distribution of heat to every room in the building . . . No cold rooms . . . Stops fuel waste.

EASY TO INSTALL . . . Any steam heating system can be easily changed to a GORTON VAPOR EQUALIZING SYSTEM . . . No piping changes necessary.

PROFITABLE TO HANDLE . . . A sure winner of satisfied customers!

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FUEL OIL SOOT DESTROYER

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Everedy and Oiltronic are designed and built by pioneer oil burner engineers—produced in a modern plant specially planned and equipped for this purpose. Dependable fine-performing and easily-installed oil-burning equipment of superior quality is the result! Five oil burner models from .65 to 20 G.P.H. 7 sensational new burner-boiler units from 340 to 3500 ft. steam E.D.R. Exclusive features of design never before offered win enthusiastic acceptance.

Most models now in quantity production—available for immediate delivery. No orders will be accepted for which specific delivery dates cannot be furnished. You'll find Everedy and Oiltronic priced for honest value that wins you sales, profits, and satisfied customers. You'll find it profitable to get full facts on Everedy and Oiltronic franchises now. Write, wire or phone Mt. Hawley Mfg. Co., Mt. Hawley Air Port, Peoria 4, Illinois. Don't delay — act today!

Everedy

Direct air, rail, and truck service from our doors to you

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You Too?

You too, like so many other dealers, may have had the disheartening experience of not being able to reap the fruits of your labor because a distributor or manufacturer has insisted upon opening other dealers in your territory after you have built public acceptance for his line.

This need never happen to you again on certain types of products; if it hasn't happened yet you can preclude such a business catastrophe by securing *while you can a lifetime franchise* on a line and trademark of which *you become the conditional owner.*

With this lifetime franchise goes a feeling of security for the future unmatched by any other business compensation—a definite knowledge that whatever you build will be yours, and your heirs, for all time—come depression and low volume, or boom and great volume that you need share with no one.

At present the line consists of oil burners, boiler-burner units and furnace air conditioning units. To be added soon, all under the same trade name, and available at the option of the dealer, are: kitchen cabinets, disposal units, dish washers, washing machines, refrigerators, vacuum cleaners, various electrical, industrial and plumbing appliances and home equipment.

The listed items will be available in 1948 but franchises should be secured now, with a start in '47 on those products which are available for immediate shipments.

A definite promotion program is ready to put to work for you in your community, and we will pay half the cost even though you become the practical owner of the tradename.

There is no objection to your carrying other lines if you wish. Prices on our products enable all our dealers profitably to compete with chain stores.

The advantages of our franchise are such that a progressive dealer in your area will secure it—it ought to be you!

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FISKE PRODUCTS, Inc.
BEDFORD, N. Y.

oil odors in the basement even though the over-fire draft is plus when the burner operates. Of course, certain boilers have a greater tendency to permit soot and odors to escape than other boilers. Wise dealers bear that in mind when they select the makes and models of boilers they will sell.

Poor combustion seemingly is increasing the trouble on the installation you describe. The products of combustion contain excessive soot and oil vapor. Do everything you can to arrive at hotter and more complete burning. With a pressure burner, a new nozzle or different air-handling parts for the end of the gun tube may help, or a new firebox painstakingly designed for complete combustion may be needed.

Finally, without a doubt it would help to obtain higher draft. Excellent results with such low over-fire draft as you describe are obtained only where (a) the boilers are practically air-tight and gas-tight, and (b) combustion is fairly complete. Take steps to obtain higher over-fire draft. Start by reading the smokepipe draft as well as the over-fire draft. Find out if the low over-fire draft is caused by insufficient chimney draft or by excessive draft-drop through the boiler. Excellent chimneys in one-family houses can give as high as .10" chimney draft, with the stack temperatures no lower than about 500° and the draft regulators set for maximum draft. You can consider this chimney in trouble if you cannot obtain .06" to .08" smokepipe draft. To end the trouble, aim for over-fire draft of .02" to .04" (negative draft) and do not adjust for lower draft until you feel certain this will not bring back the troubles of soot and oil odors in the basement.

* * *

Q. In adjusting pressure type gun burners, should we aim for 8% CO_2 or, as one home owner seems to think, for 10%?

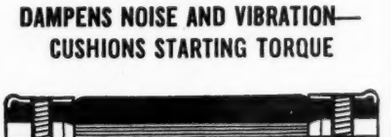
F.W., *Brooklyn, N. Y.*

A. If your oil burner and installation and service work are so good that you can obtain 10% CO_2 without inviting smoke and soot trouble, then aim for 10% CO_2. Particularly with a high stack temperature, say above 600° on a conversion installation, the fuel bills will be lower if you tune for higher CO_2. There are a few, rare installations which operate well adjusted for CO_2 as high as 12%.

CORRECT EXTREME MISALIGNMENT AT LOW COST

ONE PIECE RUBBER FLEXIBLE COUPLING

DAMPENS NOISE AND VIBRATION—CUSHIONS STARTING TORQUE



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THE BOOK SHELF

Matheson Book Complete Course On Burner Sales

THE SELLING MAN, a brand new book by W. A. Matheson, executive vice-president of Eureka Williams Corporation in charge of the Williams Oil-O-Matic Division, presents the most complete text on oilburner selling that has yet been published. Subtitled, "Specialty Salesmanship in Our Day," the book outlines the principles of all creative selling, and follows the sale of an oilburner from the first ring of the doorbell to the follow-up after installation.

In a foreword, written by James J. Nance, president of Hotpoint, Inc., Chicago, Mr. Matheson is described as one of the few men who has had a rounded experience in all levels of selling.

"There is little doubt," says Mr. Nance, "that one who reads this book, whether he is just starting in the selling profession or whether he has been engaged in it many years, can gain knowledge of sales techniques, as well as a knowledge of people. The author does not think in generalities; rather, the wisdom in these pages is specific and of a type that can be adapted to each situation that is met in sales work.

"Because this story has many aspects of an exciting adventure yarn, the reader should be warned against going through it too rapidly. It is a jam-packed training course that will reward the reader directly in proportion to the concentration and study that he gives to it."

Though the principles of specialty selling illustrated in this book are those fundamentals that can be applied to all specialty sales, the examples are those of an oilburner sale. Frank Crawford, the burner salesman in the story, sells an installation to the Harris family. Any man who ever has sold an oilburner will recognize it as a tough sale.

Typical chapter headings tell the story; "Behind That Door," "Through the Doorway," "How Do You Do, Mr. Harris," "Here Is Your Survey, Mr. Harris," "You Too Can Have This, Mr. Harris," and "Right On This Line, Mr. Harris." The chapter on the follow-up is titled, "How Do You Like Your Installation, Mr. Harris?"

Mr. Matheson has written skilfully into the book the sales know-how gained in twenty-six years of successful specialty selling. He is well known in the oilheating industry for his sales work for Oil-O-Matic in Chicago and Philadelphia, and for Delco in New York prior to his present position.

The Selling Man contains 259 pages of text. The book is 6 x 9 inches, attractively bound in blue cloth. It is published by Heating Publishers, Inc., 232 Madison Ave., New York 16, at $5.00 a copy.

Revised Book Tabulates Burner, Oil Specifications

A REVISED and up-to-date edition of the Specifications Book of Oilburners and Fueloil, the first edition published since 1941, has been released. The Book's reference value is enhanced by the inclusion of all data on burners and units as it appeared in the 1941 edition, as well as information on current models and those

America's OUTSTANDING DOMESTIC REFRACTORY PRODUCTS for Long Lasting Installations
PRODUCTS OF McLEOD & HENRY CO., Inc.
100 years of quality refractory products. All made of "Steel Mixture" flint clay with fusion point of 3200° F.
★ NU-TROJAN COMBUSTION CHAMBER
Permanent installation. 2" wall thickness holds it together without steel bands. 5 sizes to fit all boilers. Includes Baffle Head and 15 lbs. of floor and bonding material.
★ WEBCO TRIPOD REFRACTORY BAFFLE
Plate is 13" dia. No. 1 size for chambers up to 13"; No. 2 size for chambers up to 14". Guaranteed results.
★ STEEL MIXTURE flexible COMBUSTION CHAMBER
Can be shaped to any contour. Interlocking joints are air-tight. In package sets with 15 lbs. of floor and bonding material.
★ FUEL SAVER HANGING BAFFLE
Has only 2 parts. Supplied in round shapes from 12" to 24" dia.; rectangular shapes 12" x 14" to 16" x 24".
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A. R. WEBBER CO., INC. NEW HAVEN CONN.

introduced since the last edition was compiled.

The book, sectionalized and indexed for quick, easy reference, contains tabulations of data taken from questionnaires submitted by individual manufacturers. The conversion burner section lists data for more than 2400 models, made by 559 manufacturers, showing trade names, capacities, method of atomization, air source, type of ignition, oil feed, fuel used and motor size. For 700 models of boiler-burner units, submitted by 174 manufacturers, there is reproduced information on trade names and models, minimum and maximum capacities in gph, type of oil-burner, cast-iron or steel boiler and grade of fuel used. Similar specifications cover 650 models of furnace-burner units, as reported by 191 manufacturers.

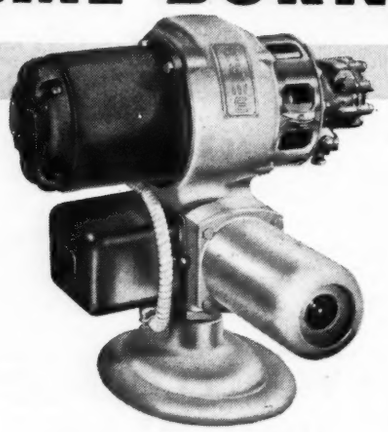
A trade names section lists alphabetically almost 600 trade names, showing company names, cities and states. It includes repeated names from the 1942 edition.

Fueloil specifications, as promulgated in Commercial Standards for Fueloils, CS 12-40, in effect since January 5, 1940, are reproduced. For information and reference, when adopted, there are tabulated suggested changes to the specifications as made by a committee, American Society for Testing Materials, which are expected to be adopted officially in a few months.

The pocket-size 116 page book, 5¼" x 8¼", is ideal for dealers, manufacturers, oil salesmen, service and installation crews, who encounter current and obsolete models in their daily work.

Published by FUELOIL & OIL HEAT, New York 16, N. Y. Price $1.00 each, with discounts offered on quantity orders.

ACME DEALERS
praise the operation of the
ACME BURNER



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★ Have you investigated the Acme line? It includes a complete range of burners from ½ to 20 g.p.h.

Acme features the famous one piece Turbostat Head which gives high CO_2 with minimum of adjustment. Interesting territories are open. Our representative will be glad to talk over your requirements.

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ACME HEAT & POWER, INC.
318 TEN EYCK STREET
BROOKLYN 6, NEW YORK

Book Spotlights American Foreign Oil Operations

AFFORDING THE READER a new insight into the international oil situation, "American Oil Operations Abroad" by Leonard M. Fanning, tells how Americans ranged the earth in search of oil and reveals the scope of American interests and activities in each country. The book is a comprehensive, factual history of all important American oil operations abroad from their beginnings early in the century up to the present.

Most of the factual data presented are based on the report presented to the Special Senate Committee Investigating Petroleum Resources. Particularly revealing are the facts about the large risks and investments, political backgrounds and long periods of work needed to find and develop foreign oil fields. The book traces the diplomatic and operational history behind the enormous total investment of nearly two and a half billion dollars in foreign lands by American oil companies and recounts how the companies have provided employment, furnished homes, schools, hospitals, utilities, sanitation and sometimes whole communities in these lands.

Bound in board covers, 382 pages, more than 250 illustrations. Published by McGraw-Hill Co., Inc., New York 18, N. Y. Price $5.00 per copy.

Fogles Depth Gauge Tables For Tanks With Flat Ends

BOOK NO. 5, published by William Fogle, Los Angeles 28, Calif., is titled, "Fogle Depth Gauge Tables For Tanks With Flat Ends." The book shows volumes in U. S. gallons at each inch of depth for the

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2288 University Ave. **St. Paul 4, Minn.**

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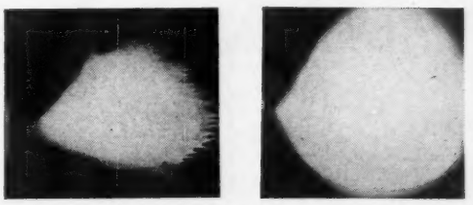

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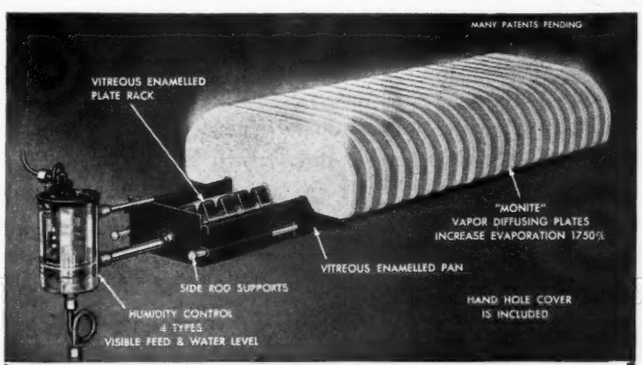
We make the only Hollow Flame gun type burner and can provide Hollow Flame Combustion Heads for any other burner.

Mr. Brophy, one of our dealers writes: "When they see the change your head makes on the —— burners I used to sell they do not want just the head. They want a complete new AIRFLAME Burner. I'll be busy with replacements all winter."

You can replace burners or heads in winter. They save fuel for customers, make profits for you.

Airflame

648 McAlister Ave. **Waukegan, Ill.**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"MONITE" VAPOR DIFFUSING PLATES INCREASE EVAPORATION 1750%
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HUMIDITY CONTROL 4 TYPES VISIBLE FEED & WATER LEVEL
HAND HOLE COVER IS INCLUDED

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Every warm air system, new or old, needs healthful, automatic humidification. For dependable service and trouble-free efficiency, Monmouth leads them all—correctly engineered, conscientiously built—no headaches afterwards. We also make Monmouth Humidity Conditioners for all radiator jobs. Details and prices on request.

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DELAVAN ENGINEERING ***Manufacture***

a good Combination THAT ECLIPSES THEM ALL . . .

Now, you will find every Balloffet design oil burner nozzle marked BALLOFFET BY DELAVAN . . . manufactured exclusively by DELAVAN ENGINEERING COMPANY, under Balloffet license. The well-known Balloffet design combined with the specialized engineering skill of DELAVAN manufacture make these nozzles unexcelled for precision construction. Built to "DELAVAN STANDARDS" symbolizes their high operating efficiency . . . dependable performance and long life.

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No Smoke Soot

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entire tank and for each lineal inch and foot of horizontal cylindrical oil and gasoline storage tanks with flat ends. Tables, computed for tanks from 12″ in diameter to 144″ in diameter, contain readings at each inch level for tanks from 2 to 40 ft. in length.

Bound in heavy paper covers, with die-cut window revealing title on inside page, book sells for $5.00 per copy, postpaid and insured.

◈

Herkimer Air Conditioning Is General Handbook

AIR CONDITIONING by Herbert Herkimer and Harold Herkimer is a new handbook on the science of heating and cooling that covers commercial and industrial practices as well as the residential. The book is a text on heating and cooling which covers estimating, sales, promotion, installation and service. The practical aspects of designing, selecting and installing equipment is stressed.

Herbert Herkimer is a consulting and industrial engineer, and formerly was the director of Herkimer Institute of Mechanical Trades, New York. Harold Herkimer, a son, is design engineer and project manager for Raisler Corp., New York.

Subject matter in the book has been selected to give a well-balanced and systematic training to a student, and to serve the engineer and technical man in designing and repairing equipment, selecting materials and estimating. The book is well supplied with illustrations and tables, and contains numerous problems with their solution.

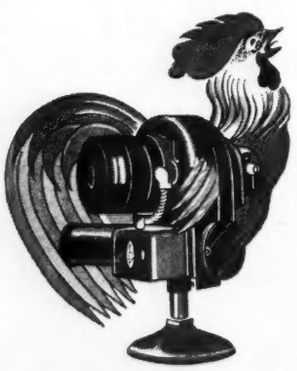
Air Conditioning contains 692 pages 5 x 8¼ inches, bound in cloth. It is published by Chemical Publishing Company at $12.00 a copy.

Text Demonstrates Cutting Sheet Metal Patterns

THE SECOND volume on sheet metal work by the same author, "Short Cuts For Round Layouts," by Joseph Kaberlein, is a text designed to guide apprentices, journeymen and sheet metal contractors in adopting and using simplified and speedier methods in completing and cutting pattern layouts.

The great variety of joints, transitions, elbows, stacks, ventilators and hoods found in round sheet metal duct work are individually described, accompanied by scale drawings with dimensions. The topics are arranged carefully in proper sequence for instruction in sheet metal pattern layout. Descriptive text is concise and emphasizes special features, which, in conjunction with the drawings, enable the reader to ascertain quickly profile developments for desired patterns.

Mathematical and data tables are in-



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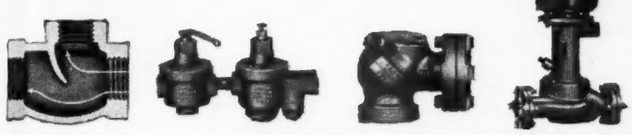

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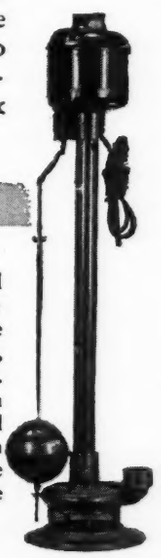
Triplex ..... is the word for it! Thanks to their advanced design and precision construction, all Triplex Flow Control Units assure the most efficient, dependable operation possible. Hot water is automatically circulated; abundant heat is supplied to radiators instantly—whenever and wherever needed. Heat loss is automatically balanced with heat supply—assuring *controlled* comfort and lower fuel costs. Ample hot water for domestic use is also provided at practically no additional cost. In other words, the Triplex line *means* hot water at its best.



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In addition to units illustrated, the Triplex line includes—Direct Drive Horizontal Circulators, Indirect Drive Circulators, Expansion Tanks, Air Eliminators, Water Mixing Valves, Air Vent Valves, Indirect Heaters, Tankless Heaters, Control Units, Electrical Controls, and Barometric Draft Dampers.

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Sat., Aug. 2, 1947

Eckhart Mfg. Co.
Dear Sir:

We have had one of your Oil Burners for 9 years now, and although we still have no complaints we feel it should be serviced.

However, since we have had such excellent performance in the past, we want to be sure of having a reliable man to do the job. Can you send one of your own men? Or if not, can you please recommend someone?

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**Name and address of customer furnished on request.*

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ECKHART MANUFACTURING CO.
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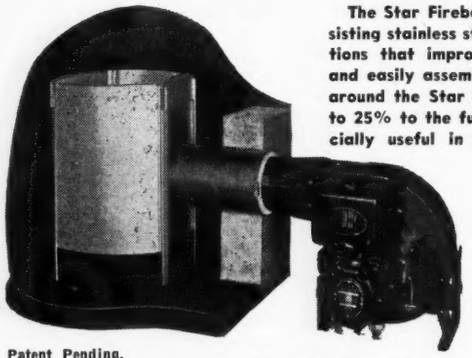
STAR ALLOY FIREBOX

CAN BE BUILT IN THREE MINUTES!



The Star Firebox is made of high heat resisting stainless steel formed in rounded sections that improve firing and are quickly and easily assembled. Heat is radiated all around the Star Firebox thereby adding up to 25% to the furnace heating area! Especially useful in cast iron furnaces where it eliminates cutting grate lugs. Sold and used from coast to coast.

Further information on request.

Patent Pending.

Manufactured by—

STAR CONDUIT BRACKET

FAST, QUIET INSTALLATION

The Star conduit bracket holds 14-2 or 14-3 bx cable or ½" thinwall conduit to furnace or boiler casings. It provides air space between conduit and heated surface as provided by electrical codes and reduces conduit hum. Price $5.50 per hundred, f.o.b., Seattle.

Free sample on request.

1723 1st Ave. So. MECHANICAL PRODUCTS CO. Seattle 4, Wash.

cluded, along with alphabetical index by subject. The text contains one hundred and thirty-three plates, 269 pages, hardboard covers, published by Bruce Publishing Co., Milwaukee 1, Wis. Price: $3.75 per copy.

◈

Climatemaker Slide Rule Performs Five Calculations

CLIMATEMAKER SLIDE RULE SERVICE, Bloomington, Ill., offers a heat loss calculating slide rule that provides information as to Btu heat loss for each room and total, cfm required for forced warm air heating for each room, pipe area, pipe size and stack size for residential forced warm air heating, and similar information for gravity systems, square feet of equivalent steam and hot water radiation. The rule is delivered in an attractive box, containing also operating instructions and heat loss calculating forms.

Sales Literature

BRIEF DESCRIPTIONS of catalogs and sales literature prepared and offered by manufacturers appear below. Those interested in securing copies of the booklets, or additional information on products described, are used to write direct to the manufacturers.

Harvey-Whipple, Inc., Springfield, Mass. Large mailing piece deals with the new Master Kraft conversion oilburner, with photographs to illustrate how pump, motor and transformer can be changed in two minutes. Other sections of the piece discuss features and a page is devoted to tabulations of combustion efficiency obtained in laboratory tests.

Breese Burners, Inc., Chicago 11, Ill. Two pieces of literature, one for consumer use. Both show vaporizing burners, with horizontal oil flame, and picture manual and thermostatically controlled models. Specification and technical data are included.

R. W. Beckett Corp., Elyria, Ohio. Five new specifications sheets on series OB, M, ME, L and LE gun type oilburners. Each sheet pictures the burner and gives complete data on capacities, electrical and fuel requirements and a list of standard burner equipment.

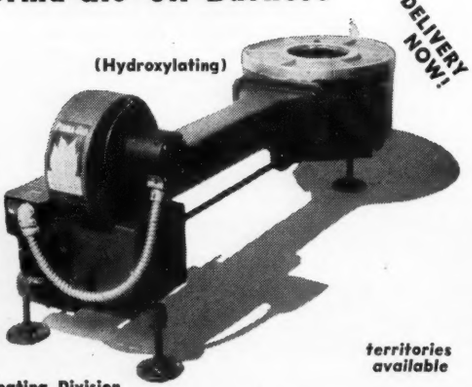
General Bronze Corp., Long Island City 1, N. Y. Four-page folder on GB oilfired warm air furnace units. Specifications are included for three units, fired with horizontal flame vaporizing oilburners, and a large cut-a-way view, with captions, points out features.

Quiet Automatic Burner Corp., Newark 4, N. J. Models 85 and 150 winter air conditioning unit is discussed in a 4-page

Perma-Glo Oil Burners

(Hydroxylating)

DELIVERY NOW!



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One Control — One Moving Part — Low Oil Pilot

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HUGH MFG. CO. Box 145 Hartley, Iowa

STANDARD WATER TUBE BOILERS

A MODERN HEATING PLANT FOR BETTER HOMES!

designed for ECONOMY of OPERATION DEPENDABILITY and EFFICIENCY

Write for BULLETIN No. 108

Standard Heater & Oil Equipment Co.
245 CORNELISON AVENUE, JERSEY CITY 2, NEW JERSEY

BRASS FITTINGS

Flared tube, compression and special fittings.
Copper tube assemblies manufactured to your specifications.
Pot type oil burner carbon reamers.

Write for our catalog

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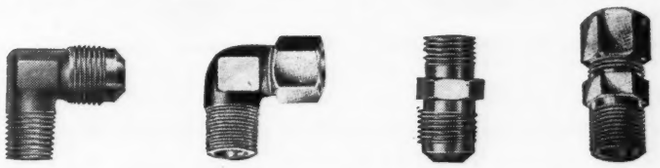
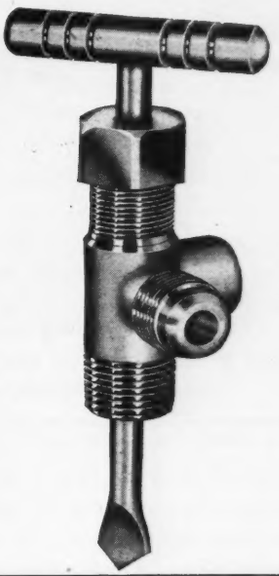
AND MANUFACTURING COMPANY
601 SOUTH WILMOT STREET • OTSEGO, MICHIGAN





folder. Illustrations show various parts and also picture the assembled unit, with panels removed, to show interior construction and arrangement. A list of standard equipment is accompanied by dimensional data and capacities.

Refractory & Insulation Corp., New York 5, N. Y. Bulletin OB-98 on R & I combustion chamber. Includes discussion of the chamber's ease of assembly and adaptability to most boilers or furnaces. Functions and uses of hearth, insulating and refractory cement and Pakinsul rockwool, all used with the chamber, are discussed separately.

Hago Products, Irvington 11, N. J. Four page folder, showing component parts of oilburner nozzles, adapters and strainers, with capacity chart listing models from .75 to 20 gph at 100 lbs. pressure and equivalent capacities at 75, 125 and 150 lbs. pressure. Includes short discussion on care and cleaning nozzles.

Taco Heaters Inc., New York 17, N. Y. Mailing piece, pictures and describes, Taco-Matic valve to maintain boiler water at 180° F., Taco Flo-Jet venturi fitting and Taco tempering valve, described as three "trouble shooters" for forced hot water jobs. Function of each fitting is explained briefly and an installation diagram shows correct application.

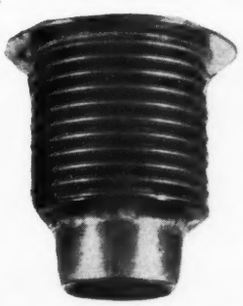
Mayflower Oil Burner Corp., West New York, N. J. Consumer folder, in color, which shows conversion oilburners, with explanations of advantages obtained from their installation. Photographs show controls and component parts, and, on the same page, a table lists factory tests performed on Mayflower burners.

Rajah Co., Bloomfield, N. J. Form O contains pictures and explanations of terminals for oilburners. Various types and styles of terminals are shown and identified by model number. Separate sections illustrate and describe the use of hand terminal crimping tool and eyelet crimping pliers. Different methods of using the terminals on oilburner assemblies also are included.

Richfield Mfg. Corp., New York 11, N. Y. Folder, with space for dealer imprint, on Richfield Flame Control conversion oilburner. Employs a labelled photograph of the burner to explain application and operation of the turbulator combustion head. Lists capacity data and other specifications, and contains reference to Richfield boiler and furnace units, also available with the burner.

Gilcor Products Corp., Dowagiac, Mich. Data sheet on model 30 Gilcor oil-fired unit, with features explained and

REPLACEMENT BELLOWS ASSEMBLY FOR A WELL-KNOWN FUEL UNIT — FURNISHED WITH GASKET.



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—Fob Brooklyn

12—List Price $21.00
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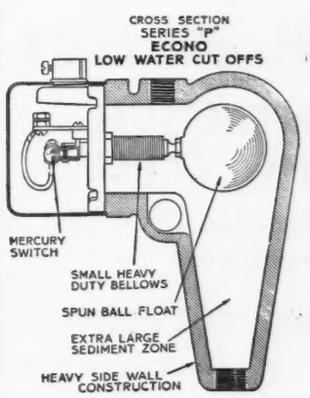

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Low Water Cut-Offs are precision built and reasonably priced. Made to fit all makes of steam boilers.

Order from your Jobber.

ECONO Products Company
250 Stuart Street,
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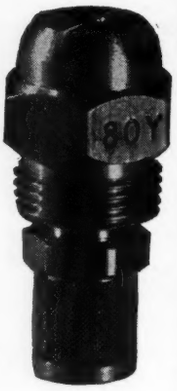
Products of 26 years' experience in the design and production of oil-burners. Extreme Precision—Guaranteed Accuracy.

All Capacities and Angles
"For those who want the best"



Ace Cooperating Engineers
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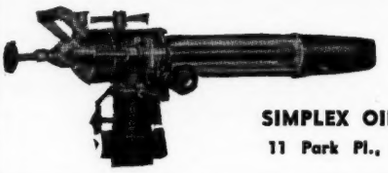
Since SIMPLEX OIL HEATING CORPORATION — SIMPLEX — OIL BURNING SYSTEMS — REG. TRADE MARK — 1910

Simplex Oil Burning Systems



RESULTS COUNT!

SIMPLEX OIL HEATING CORP.
11 Park Pl., New York 7, N. Y.

operation of vaporizing water heater visibly portrayed with a cut-a-way view. Another folder, designed for consumer selling, is folded to fit ordinary mailing envelopes, and develops points which will appeal to prospective purchasers. Cut-a-way view of the heater is accompanied by specifications table, with data for three models. Space is provided for dealer imprint.

Janette Mfg. Co., Chicago 6, Ill. Bulletin 24-1 contains information on the Janette line of blower wheels, incorporating tables with complete performance and dimensional data. Labelled diagrams are used liberally to illustrate construction and operating features, which are discussed in accompanying copy. The 20-page catalog enumerates information necessary when ordering blower wheels and includes a separate sheet with current price data.

Shafco Distributing Corp., Detroit 26, Mich. A 4-page folder on ceiling-suspended oilfired units, with bonnet ratings of 150,000, 240,000 and 360,000 Btu/hr. The counter flow principle of air and heat, employed in the unit, is discussed in detail, accompanied by specification and dimension data for the three sizes. Units are designed for commercial and industrial applications where substantial heat output is called for, but where space is at a premium.

B. A. Peterson Co., Dowagiac, Mich. Petco interlocking combustion chambers are the subject of a 6-page, gate-folded catalog. Ratings and data are included for a complete line of round and vertical

WARM AIR BOOSTERS At Real Low Prices

8-inch size, complete with motor, now at this money-saving price. All sizes available for prompt delivery. Write today.

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MANUFACTURING CO., INC.
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Several Territories Available

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Dealer and Distributor Inquiries Invited.

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Remove Soot and Carbon

with CLEAN SWEEP

- Fast
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- Easy-To-Use
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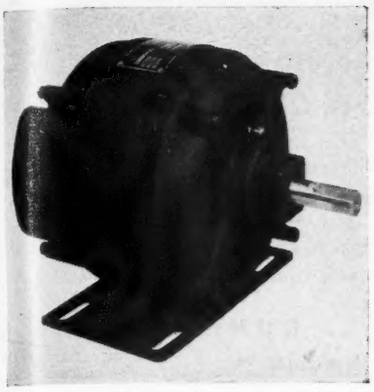
CLEAN SWEEP CO. P. O. BOX 156 SO. LANSING 9, MICH.

SEE YOUR JOBBER OR WRITE US.



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ENGINEERED POWER

FOR YOUR OIL BURNER

★ Streamlined styling for your design of tomorrow.
★ Compactness and lightweight lend symmetry to the appearance of your product.
★ High starting torque, power reserve, and ample overload protection assures you of quiet, smooth performance.
★ Simplicity of design makes for years of trouble-free service.

ENPO motors, built to quality instead of price, are also produced in resilient and rigid mountings in single and polyphases, in sizes from 1/6 to 1/3 horsepower.

ENPO leadership in Engineering, Design, and Production "Know-how", gives you the best in workmanship and performance for customer satisfaction.

Your inquiries and special engineering problems will be welcomed

Manufactured By

THE PIQUA MACHINE & MANUFACTURING CO., YOUNG & COLLEGE STS., PIQUA, OHIO

chambers and three sizes of baffles. Petco insulating cement, also discussed, is shown in actual installation and tabulated to illustrate amounts required for use with various chambers. Separate pages contain photographs of special shapes cast to individual specification and a picture story to show installation procedure.

Diesel Oil Burner Corp., Jamaica, N. Y. An attractively-prepared 8-page booklet, with space for dealer imprint, presents to prospective purchasers a sales story on Diesel-American gun type oil-burners. Vernier flame control and other features are discussed and specifications for four models give ratings in sq. ft. EDR steam and hot water. Photographs and drawings are used extensively to illustrate points.

Ultra Metal Utilities Corp., Long Island City 2, N. Y. Presents facts and data on stainless steel nozzles to include capacities and information on spray angles, strainers and adapters. Information needed to order properly is enumerated and illustrations afford a cut-a-way view of a nozzle and its component parts.

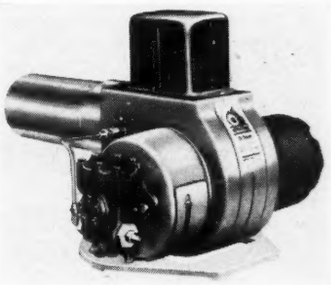
Wodack Electric Tool Corp., Chicago 44, Ill. Bulletin 471, a data sheet on Do-All electric hammer and drill, with copy to point out uses and applications. Specifications and prices cover various outfits and accessories. Bulletin 472 contains similar data on star drills.

Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn., employs a small 12-page booklet, "The Electronic Way," to explain the principles of electronic controls and how they are applied to domestic and industrial applications. By word and diagram, the book constructs an imaginary electron tube composed of a hair pin, window screen and tin can, to illustrate in non-technical language the function of each part of the tube.

Columbian Steel Tank Co., Kansas City, Mo. Fifty-six page catalog No. 741, which pictures and describes a complete line of tanks, and equipment, for oilburner, fueloil trade. Truck tanks of various types and semi-trailers are shown in numerous models, with specification and price data included. Complete data are shown for bulk storage tanks, and a complete line down to 65 gal. capacity, together with information for meters and other accessory equipment.

Kewanee Boiler Corp., Kewanee, Ill. Catalog 97 gives complete performance, technical and dimensional data on type C steel boilers for large installations. Typical installation photographs show the boilers installed individually and in series.

AT LAST
An Oil Burner
with a
15% Co2



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A Terrific Business Builder that can be had under your own Brand Name

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LIMITED SUPPLY OF REBUILTS FOR SALE.
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ON ANY QUANTITY

KEN OIL TANK VALVE

For ⅜" O.D. Tubing—½" I.P.T.

Pat. Pend.

Saves time, money, nipples, brass fittings and possible leaks. Just bush tank opening to ½", install valve, and flare tubing. Metal-to-metal seat. Oil-tight double packing. Made from solid brass rod. List $1.50.

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WOULD YOU SPEND A DOLLAR TO GET A NEW CUSTOMER?

Send $1.00 and I will send you an idea that has brought me 1000 new customers for Coal and Fuel Oil. It should do as well for you, now and for years to come. If you are not satisfied I'll return your money.

RALPH S. DUNNE

Fuel Merchant

Narberth, Pennsylvania

Fueloil Ration Data

(*Continued from page 82*)

	R-1100 Central		R-1100 Space	
	Number Issued	*Average Gallons*	*Number Issued*	*Average Gallons*
SOUTH CAROLINA				
Columbia District				
Abbeville	3	916.7	204	162.5
Aiken	182	1042.1	710	196.1
Allendale	6	875.0	82	245.7
Anderson	46	961.3	486	270.0
Bamberg	13	777.7	190	287.3
Barnwell	27	918.5	150	243.4
Beaufort	64	937.9	869	194.3
Berkeley	9	980.0	246	254.3
Calhoun	23	984.8	152	241.8
Charleston	738	733.8	17,655	225.6
Cherokee	20	997.5	255	181.3
Chester	15	1192.0	231	198.2
Chesterfield	25	1114.0	222	319.8
Clarendon	34	895.3	162	292.2
Colleton	44	1178.0	364	232.6
Darlington	56	1004.5	630	281.8
Dillon	22	960.5	280	314.5
Dorchester	69	909.7	528	229.9
Edgefield	6	915.3	28	264.1
Fairfield	17	1085.3	158	79.0
Florence	162	923.0	1,322	280.7
Georgetown	86	1009.8	741	299.6
Greenville	274	972.1	1,303	230.8
Greenwood	27	1091.7	498	261.9
Hampton	10	996.0	206	291.2
Harry	101	768.5	484	245.3
Jasper	6	1626.7	159	271.5
Kershaw	63	1475.4	278	312.1
Lancaster	22	679.5	234	234.5
Laurens	25	1244.0	368	176.9
Lee	5	1130.0	138	268.8
Lexington	36	877.7	416	263.8
McCormick	..	..	27	51.7
Marion	56	905.1	430	232.3
Marlboro	12	1182.5	293	261.9
Newberry	28	908.8	281	149.0
Oconee	4	1187.5	168	265.0
Orangeburg	116	890.2	806	236.5
Pickens	22	1153.2	184	186.6
Richland	1,091	817.6	2,812	262.9
Saluda	7	546.4	62	241.2
Spartanburg	177	1105.6	1,177	228.7
Sumter	132	1076.2	894	284.8
Union	16	1086.3	263	119.3
Williamsburg	29	999.1	262	239.0
York	17	1121.6	762	267.0
SOUTH CAROLINA TOTAL	3,994	903.1	38,543	237.4
VIRGINIA				
Roanoke District				
Alleghany	14	958.2	30	176.1
Clifton Forge	17	1398.8	10	430.0
Augusta	42	1322.5	442	171.2
Bath	15	2380.0	20	225.7
Bedford	64	1603.9	65	234.9
Bland	..	..	2	305.0
Botetourt	28	1137.9	88	127.2
Buchanan	..	..	..	..
Campbell	31	1356.8	149	279.1
Lynchburg	219	1636.3	95	305.4
Carroll	7	2614.3	6	225.0
Craig	4	790.0	3	338.3
Dickenson	..	..	..	..
Floyd	2	2275.0	..	..
Franklin	9	1300.0	14	317.5
Giles	3	800.0	19	213.7
Galax	3	1450.0	16	327.5
Grayson	..	..	5	464.0
Henry	115	1635.4	225	284.2
Highland	..	..	6	385.0
Lee	..	..	1	100.0

OIL BURNER IGNITION TRANSFORMERS

Underwriter Approved

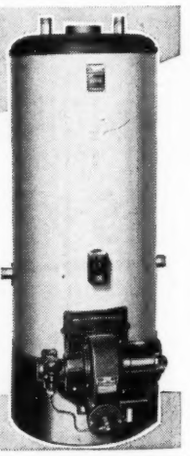
25 years of research and practical experience.
Well-balanced design—insures dependable performance.
Radio filtered.
Standard types with universal mounting plates for easy interchangeability. Voltages ranging from 5,000 to 12,000 volts.
Special voltages for domestic and foreign use.

Inquiries Invited

OIL BURNER DEVICES CORP.

14 River Street, Norwalk, Conn.

Bock OIL BURNING WATER HEATERS



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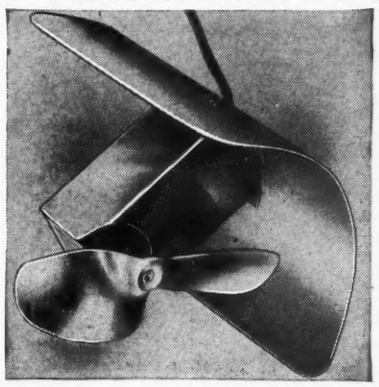
Bock CORPORATION

MADISON, WISCONSIN

	R-1100 Central		R-1100 Space	
	Number Issued	*Average Gallons*	*Number Issued*	*Average Gallons*
Montgomery	113	759.0	116	437.7
Patrick	4	1237.5	3	525.0
Pittsylvania	232	1269.4	761	240.4
Pulaski	223	592.0	105	135.6
Roanoke	451	1107.4	720	99.3
Rockbridge	11	975.9	79	366.8
Buena Vista	..	..	52	335.2
Russell	..	..	..	..
Scott	..	..	3	66.7
Smyth	2	1750.0	23	37.9
Tazewell	..	..	..	..
Washington	..	..	..	..
Wise	1	1700.0	4	173.7
Wythe	9	1522.2	23	119.8
Alexandria	3,462	980.0	748	215.6
Amherst	18	1186.1	98	244.8
Appomattox	6	1300.0	48	356.1
Arlington	10,007	880.4	121	302.4
Charlotte	9	1405.6	63	195.9
Clarke	52	1555.8	2	600.0
Fairfax	2,688	1009.1	630	798.3
Fauquier	88	1534.8	189	354.5
Frederick	163	1433.7	153	325.6
Halifax	33	1342.7	214	348.3
Loudoun	156	1502 9	163	385.3
Nelson	3	1216.7	46	216.8
Page	41	1696.3	105	171.7
Prince William	97	1268.8	328	289.8
Rappahannock	18	1472.2	19	364.7
Rockingham	130	1377.3	255	186.2
Shenandoah	21	1433.3	202	310.6
Warren	181	1557.0	389	283.0
Richmond District				
Accomack	126	1527.4	1,094	425.3
Albermarle	315	1534.8	282	303.1
Amelia	9	986.7	63	139.4
Brunswick	38	1153.6	143	297.1
Buckingham	9	1611.1	28	480.5
Caroline	38	1456.6	68	395.9
Charles City	13	2098.5	30	355.8
Chesterfield	1,239	340.5	1,212	376.3
Culpeper	21	1778.6	129	211.4
Cumberland	5	810.0	4	362.5
Dinwiddie	19	1517.7	165	379.3
Petersburg	256	1322.9	1,005	347.9
Elizabeth	1,038	1093.6	3,271	388.8
Essex	76	1154.7	87	271.5
Fluvanna	2	2175.0	47	128.4
Gloucester	60	1708.5	529	387.0
Goochland	22	1450.0	30	476.2
Greene	..	..	5	398.0
Greensville	71	1107.6	241	373.7
Hanover	161	1407.9	302	364.8
Henrico	1,275	1034.9	2,247	321.3
Richmond	6,950	1223.6	12,190	255.4
Isle of Wight	41	1892.7	428	367.8
James City	299	1266.9	473	403.1
King & Queen	1	1250.0	39	387.8
King George	22	1562.7	273	364.3
King William	56	1410.7	172	293.3
Lancaster	40	1385.5	240	439.2
Louisa	9	1805.6	34	313.2
Lunenburg	23	1106.5	106	599.5
Madison	13	1430.8	42	277.8
Mathews	33	1397.9	503	334.6
Mecklenburg	66	1193.3	218	189.9
Middlesex	11	1271.0	194	529.2
Nansemond	302	1137.5	1,272	363.8
New Kent	5	1790.0	55	300.6
Norfolk	5,356	1123.5	17,611	371.3
Portsmouth	540	1230.2	5,298	272.0
Norfolk	88	1718.7	2,043	331.7
Northhampton	139	1538.3	654	439.2
Northumberland	48	1350.0	185	363.6

A VENTILATED BOOSTER FAN



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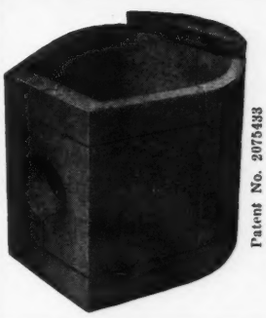
Heat that cold room with this self cooled booster fan installed in the pipe. Simple, effective, long wearing, and exceptionally quiet. Fits pipe sizes from 8" to 12". For complete information, write to:

McLarty Systems,
Battle Creek, Mich.

truly **TIME-TESTED**



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THE HEART OF YOUR HEATING SYSTEM

Conserves Fuel—Improves Efficiency

COMPLETE INSTALLATION IN ONE STURDY WOODEN BOX

Monogram Combustion Chamber Co.
PHILADELPHIA 4, PA.

Sundstrand
All Electric
OIL BURNER

Tested and Proven By Time and Performance

For Dealers Who Want Completely Satisfactory Service

SUNDSTRAND ENGINEERING CO.
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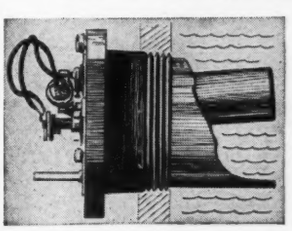
"QUALITY BURNERS FOR 26 YEARS"

BRONZE CONTROLS
for Permanent Protection



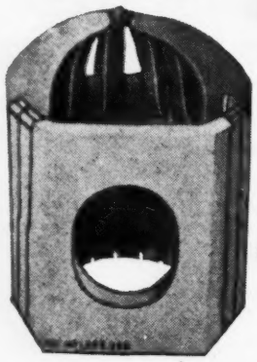
Low Water Cutoffs and Pressure Controls

Available In Single or Combination Units

Write for further information

NEWARK CONTROLS BLOOMFIELD, NEW JERSEY

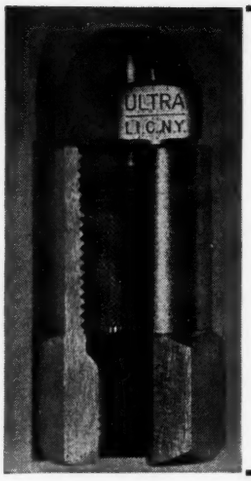
S. O. S. FIRE-KING COMBUSTION CHAMBER



- Really Interlocking!
- No Cement!
- Slip-On Baffle!
- Makes Any Shape!
- Kiln-Burned!

Write for Full Descriptive Literature
S. O. S. PRODUCTS CO., INC.
282 Nassau Ave., Brooklyn 22, N. Y.
Dept. F.O.

S·O·S



ULTRA
OIL BURNER NOZZLES

PRECISION MANUFACTURE OUTSTANDING IN THE FIELD

A stainless-steel nozzle made of 3 parts: strainer-disk-tip. Precision-built in design and construction. The ultra nozzle performance is reflected in absolute uniform atomization.

Write for details.

Ultra Metal Utilities Corp.
27-05-07 ASTORIA BOULEVARD
LONG ISLAND CITY 2, N. Y.

	R-1100 Central		R-1100 Space	
	Number Issued	*Average Gallons*	*Number Issued*	*Average Gallons*
Nottoway	46	1454.3	500	250.9
Orange	67	1443.4	152	264.7
Powhatan	13	1376.9	38	250.9
Prince Edward	40	1493.5	119	191.3
Prince George	216	1100.4	1,091	365.1
Princess Anne	648	1200.9	2,231	415.1
Richmond	22	1592.3	91	353.5
Southhampton	97	1261.4	635	402.5
Spotsylvania	17	1370.6	141	435.3
Fredericksburg	277	1450.9	432	309.3
Stafford	31	1264.8	123	396.9
Surry	14	1599.9	132	395.9
Sussex	35	1414.3	276	349.0
Warwick	1,331	836.3	1,839	471.8
Newport News	1,575	765.4	2,430	415.9
Westmoreland	39	1360.9	198	417.0
York	61	879.9	488	365.6
VIRGINIA TOTAL	42,156	1047.4	71,243	336.8
WEST VIRGINIA				
Barbour	..	..	11	105.5
Berkeley	117	1517.1	302	223.1
Boone	..	..	15	104.2
Braxton	..	..	..	..
Brooke	6	1121.3	..	..
Cabell	..	..	20	129.5
Calhoun	..	..	..	..
Clay	..	..	..	..
Doddridge	..	..	..	..
Fayette	1	..	43	..
Gilmer	..	..	..	..
Grant	..	..	3	2000.0
Greenbrier	8	1625.0	..	..
Hampshire	2	450.0	3	243.3
Hancock	13	1604.4	7	71.0
Hardy	2	1875.0	28	438.2
Harrison	5	100.0	24	137.9
Jackson	..	..	..	..
Jefferson	70	1289.4	175	218.9
Kanawha	1	..	103	..
Lewis	..	..	..	..
Lincoln	..	..	..	..
Logan	..	..	74	..
Marion	..	..	15	242.0
Marshall	..	..	..	..
Mason	1	2600.0	30	153.3
McDowell	..	..	10	..
Mercer	..	..	175	..
Mineral	..	..	43	285.7
Mingo	..	..	1	150.0
Monongalia	..	..	55	285.4
Monroe	..	..	..	..
Morgan	10	1082.0	94	317.3
Nicholas	..	..	..	..
Ohio	11	1145.5	20	263.4
Pendleton	5	1728.0	18	391.1
Pleasants	..	..	..	..
Pocahontas	5	1400.0	10	212.2
Preston	..	..	2	450.0
Putnam	..	..	15	80.3
Raleigh	..	..	97	62.2
Randolph	..	..	15	164.5
Ritchie	..	..	..	..
Roane	..	..	..	..
Summers	4	1775.0	2	400.0
Taylor	..	..	10	85.0
Tucker	..	..	..	..
Tyler	..	..	..	..
Upshur	..	..	..	..
Wayne	..	..	..	..
Webster	..	..	1	15.0
Wetzel	..	..	..	..
Wirt	..	..	..	..
Wood	3	591.7	12	249.2
Wyoming	..	..	..	..
WEST VIRGINIA TOTAL	264	1386.9	1,433	181.8

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Automatic Oil-Burning
Furnaces—Water Heaters

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